Steunpunt beleidsrelevant onderzoek 3de generatie
Studie- en Schoolloopbanen

SYSTEMIC OBSTACLES TO PARTICIPATION IN LIFELONG LEARNING

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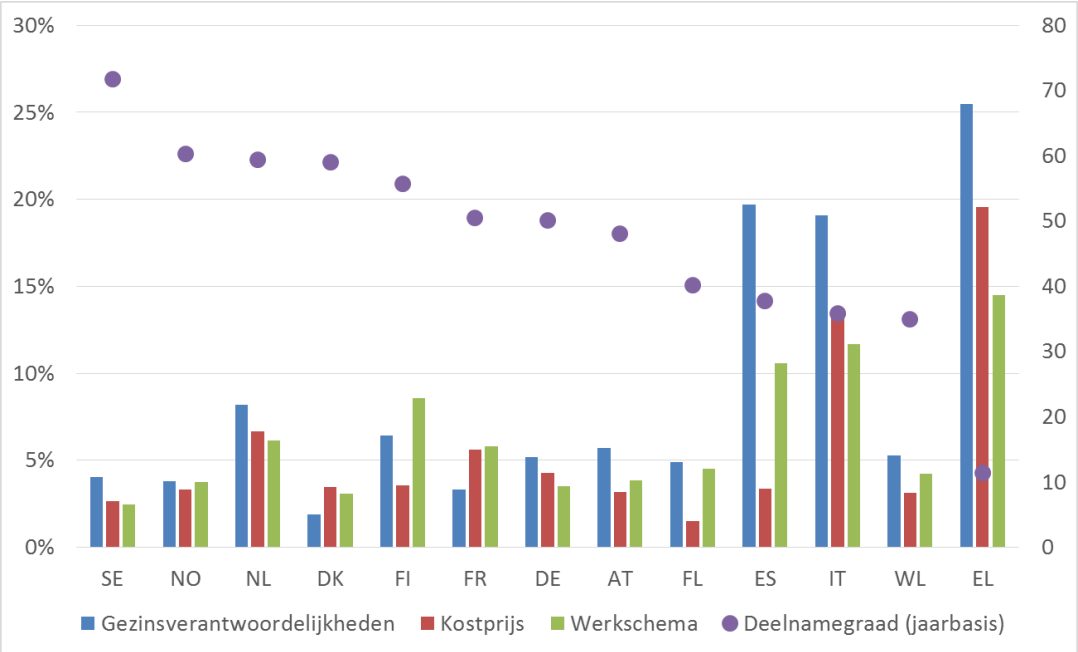
Beleidssamenvatting

Een centrale doelstelling in het Europees strategisch beleidskader m.b.t. onderwijs en opleiding (Education & Training 2020) is de verhoging van de deelname aan levenslang leren tot 15% van de bevolking leren (deelname aan een opleidingsactiviteit gedurende de voorafgaande maand). In Vlaanderen stagneert deze deelname echter al enige jaren rond de 7%. In ons vorige rapport (Lavrijsen en Nicaise (2015b)) concludeerden we op basis van drie recente enquêtes (EAK, AES, PIAAC) dat Vlaanderen daarmee internationaal onder het gemiddelde scoort. Daartegenover viel in het bijzonder de gunstige positie van de Scandinavische landen op, met name wat betreft de participatie aan levenslang leren door personen met een laag initieel opleidingsniveau.

In dit rapport gaan we verder in op de drempels die mensen ondervinden bij het deelnemen aan levenslang leren. Wat staat mensen in de weg, en hoe zorgen we er voor dat meer mensen gaan deelnemen aan levenslang leren? Uit onze analyses van AES- en PIAAC-gegevens blijkt dat een hoog inschrijvingsgeld, een moeilijke combinatie met gezinsverantwoordelijkheden en een zwaar beladen werkschema de drie obstakels zijn die door respondenten het vaakst worden aangehaald om het niet-deelnemen aan levenslang leren te verklaren. Personen uit kwetsbare groepen, zoals laagopgeleiden en mensen met een laag inkomen, worden bovendien bovengemiddeld met deze drempels geconfronteerd. Uit een internationale vergelijking van de gerapporteerde drempels kan verder worden afgeleid dat de hoge deelname aan levenslang leren in de Scandinavische landen het gevolg lijkt van een ambitieus geïntegreerd beleid, waarbij een toegankelijk opleidingsaanbod mogelijke conflicten tussen werk, gezin en vorming weet op te lossen (Figuur 1). In het bijzonder in vergelijking met de Zuid-Europese landen lijken deze drempels in de meeste Noord-Europese landen, maar ook in een aantal andere West-Europese landen, zo goed als weggewerkt.



Figuur 1: Percentage respondenten dat aangeeft niet deel te nemen aan levenslang leren door gezinsverantwoordelijkheden, kostprijs, of werkschema, vergeleken met de deelnamegraad op jaarbasis (AES 2011; respondenten konden meerdere drempels rapporteren)

Toch lijkt de puzzel hiermee verre van opgelost. Een intrigerende vaststelling is bijvoorbeeld dat ook Vlaanderen uitmuntend lijkt te scoren in het wegwerken van de belangrijkste drempels die levenslang leren bemoeilijken (zie ook Djait en Boey (2014)) - zo is het aandeel respondenten dat niet deelnam aan opleidingen omwille van de hoge kostprijs het laagste van heel Europa (Figuur 1). Een recente vergelijkende studie (Eurydice (2015), zie Hoofdstuk 1) bevestigt inderdaad dat Vlaanderen voorop loopt in het toegankelijk maken van het opleidingsaanbod, onder meer door de doorgedreven modularisering van opleidingen, de bundeling van sectorale initiatieven in sectorfondsen, en financiële incentives als de opleidingscheques (cf. Sels (2009)). Toch vertaalt zich dat blijkbaar niet in een hoge deelnamegraad aan levenslang leren, en al zeker niet in een hoge deelnamegraad onder respondenten met een lage initiële opleiding. Hoe valt dat te verklaren?

Een gedeeltelijk antwoord op deze vraag schuilt mogelijk in wat de 'leerbereidheid' van mensen kan worden genoemd (cf. Kyndt, Govaerts, en Dochy (2014)). Veel meer dan een specifieke drempel die de deelname zou hebben belet, rapporteerden de AES- en PIAAC-respondenten immers dat ze gewoon aan geen enkele opleiding *wilden* deelnemen. Het is jammer dat de dataverzameling, in het bijzonder die voor de AES, ons op dit vlak wat in de steek laat. Een analyse van de antwoordpatronen, samen met een gedetailleerde analyse van de vragenlijsten uit vier landen, toont immers aan dat de procedures die de verschillende nationale statistische instituten hebben gevolgd om hierover informatie te verzamelen sterk afwijken van de door Europa centraal bepaalde methode[1] (zie Hoofdstuk 2 en Bijlage 1). Op basis van de vragen in PIAAC, die eenvormiger lijken tussen de verschillende landen maar eigenlijk evenmin optimaal werden geformuleerd, stellen we vast dat Vlaanderen inderdaad een relatief grote groep respondenten heeft – tot 74% van de respondenten met een lage initiële opleidingsachtergrond, enkel in Italië ligt dit aandeel hoger – die geen enkele opleiding *wilde* volgen.

Het begrijpen van deze weinig gunstige positie was de reden waarom we nog twee extra hoofdstukken aan dit rapport hebben toegevoegd (Hoofdstukken 4 en 5). In het bijzonder onderzochten we daarbij, op basis van een aantal gerichte vragen uit de PIAAC-vragenlijst, de houdingen van respondenten t.o.v. leren: leert men graag bij? Gaat men actief op zoek naar nieuwe informatie om verbanden te doorgronden? In PIAAC krijgt elke respondent op basis van zijn antwoordpatroon daarbij een '*readiness to learn*'-score (leerbereidheid). Gemiddeld gezien doet Vlaanderen het niet zo goed in dit opzicht: we halen zelfs de laagste gemiddelde leerbereidheidsscore van alle onderzochte West-Europese landen. Vooral de minder hoog opgeleiden laten bovendien een eerder negatieve houding t.o.v. leren optekenen, vergeleken met hun tegenhangers uit andere landen.

Bovendien stelden we daarbij een opvallende overeenkomst vast tussen de gemiddelde leerbereidheid van volwassen respondenten en de manier waarop het secundair onderwijs is ingericht. In Figuur 2 worden de onderzochte EU-landen, op basis van een aantal systeemkenmerken van hun initieel onderwijssysteem, geklasseerd in vier 'onderwijsregimes'[2]:

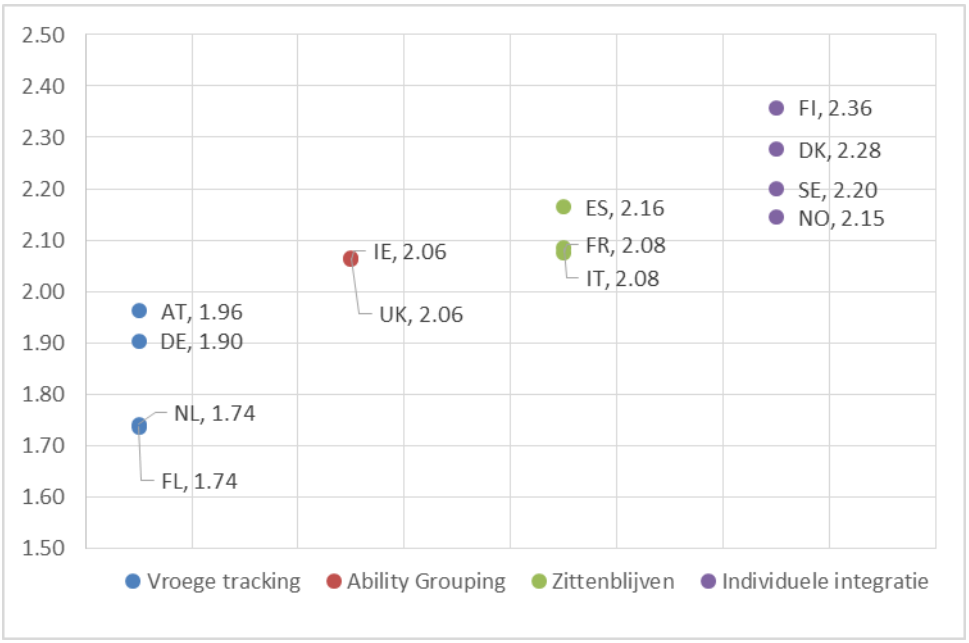
1. Landen met vroege 'tracking', waarbij leerlingen vroegtijdig in verschillende studierichtingen worden gesorteerd (Vlaanderen, Nederland, Duitsland, Oostenrijk).

[1] Ere wie ere toekomt: de Belgische gegevens, verzameld door Algemene Directie Statistiek - Statistics Belgium, lijken de enige van de onderzochte landen die consequent in lijn waren met de Europees opgelegde procedure.

[2] De typologie is ontleend aan de studie van Dupriez, Dumay & Vause (2008). In die studie vond men ondermeer een duidelijk verband tussen het onderwijsregime en de mate van sociale ongelijkheid in onderwijsuitkomsten.

2. Landen met 'ability grouping', waarbij leerlingen flexibel en vak per vak worden gegroepeerd in sterke en minder sterke klassen (het VK en Ierland).
3. Landen met een eenvormig curriculum, maar waarin zittenblijven zeer frequent wordt gebruikt als filter-mechanisme (Frankrijk, Spanje en Italië).
4. Landen met een comprehensief onderwijssysteem, waar geen van de voorgaande kenmerken aanwezig is maar waar men integendeel streeft naar differentiatie op maat van de leerling ('*individualized integration*') (Finland, Denemarken, Noorwegen, Zweden).

Uit Figuur 2 kan dus worden afgeleid dat naast Vlaanderen ook in andere landen met een vroege *tracking* de leerbereidheid relatief laag is.



Figuur 2: Gemiddelde leerbereidheid van respondenten uit verschillende types onderwijssystemen (PIAAC 2012)

Vormt deze vaststelling nu een extra argument voor de hertekening van het secundair onderwijs? Hier willen we voorzichtig zijn: ook andere factoren kunnen de vastgestelde correlatie bepalen (bv. culturele verschillen tussen landen). Op basis van leerlingentests (PIRLS en TIMSS) weten we bijvoorbeeld dat een eerder negatieve houding t.o.v. schoolse praktijken al kan worden vastgesteld bij leerlingen in Vlaamse *lagere* scholen (zie Hoofdstuk 5). De vormgeving van het secundair onderwijs kan dan ook moeilijk als enige reden voor de minder positieve houding van Vlaamse volwassenen t.o.v. leren worden gegeven. Wel stellen we vast dat, ook als we corrigeren voor in de basisschool gemeten houdingen t.o.v. leren, vroege tracking (en in mindere mate ook het veelvuldig gebruik van zittenblijven) een negatief effect lijkt te hebben op de leerbereidheid. Deze analyses hebben echter een nog eerder beperkte statistische kracht; bovendien lijkt de grootte van het effect af te hangen van de keuze van de dataset en van wat daarin precies onder 'leerbereidheid' wordt verstaan. Bovendien blijkt uit een opsplitsing tussen respondenten met verschillende vaardigheidsniveaus dat, anders dan men zou verwachten, ook de leerbereidheid van respondenten met een hoge vaardigheidsscore nadeel lijkt te ondervinden van vroege tracking en zittenblijven. Dat kan opnieuw de vraag doen rijzen naar een mogelijke verstoring door nog niet-geobserveerde landspecifieke factoren die de leerbereidheid in zijn algemeenheid beïnvloeden. Verder onderzoek is hier dus zeker aangewezen.

Introduction

In Lavrijsen and Nicaise (2015b), we introduced the topic of lifelong learning by considering data on participation collected in three recent surveys (LFS, AES, PIAAC). We observed that country rankings in participation in life-long learning correspond rather well to a set of educational regime and welfare state typologies. In particular, countries from the "social-democratic" cluster of welfare states (as defined by Esping-Andersen (1990)) seem more able to incentivise their citizens to participate in life-long learning than countries from the "conservative" and "Mediterranean" clusters. This correspondence between welfare and educational system design and individual participation behaviour was explained by the bounded agency argument, which postulates that individual decisions about participation in learning activities are bounded by a social context that limits the possible choices and that makes participation less or more attractive, and that the design of the welfare and educational system influences the extent to which citizens can overcome possible barriers (Desmedt (2006); Rubenson and Desjardins (2009); Boeren, Nicaise, and Baert (2010); Boeren (2011); Desjardins and Rubenson (2013)).

In this report, we will zoom in on what causes these observed differences in lifelong learning participation between countries and social groups. We will examine which obstacles prevent individuals, in particular those with a low initial level of educational attainment, from participating in lifelong learning. To this end, we will make use of self-reported accounts of such obstacles, as registered in the Adult Education Survey and in PIAAC. As these accounts seem to offer at best a partial explanation of non-participation, we will further develop the concept of learning intentions, i.e. the attitude towards learning among adults, and investigate to what extent such attitudes are generated already within the initial education system.

Chapter 1 Barriers to lifelong learning

In this chapter we will summarize which kinds of barriers may be withholding individuals from participation in lifelong learning, and which policies have been developed in order to reduce the prevalence of such barriers.

1.1 A double perspective: rational choice and psychological dispositions

As we already discussed in Lavrijsen and Nicaise (2015b), the literature on the drivers behind and the obstacles preventing lifelong learning participation has been expanding quickly in recent years. Throughout this literature, research on participation barriers has often drawn on a typology of barriers that dates back to Cross (1981). However, for reasons explained below, we will instead build this analysis on a framework developed by Boeren, Nicaise, and Baert (2010). This framework explains (non-)participation in lifelong learning from two complementary perspectives: a rational-choice perspective and a psychological one. This double perspective is important, because both dimensions are necessary ingredients of any policy response aimed at increasing lifelong participation.

1.1.1 Rational-choice perspective: costs and benefits

The first 'rational-choice perspective' mainly draws on human capital theory (Becker (1962)). This perspective explains participation in lifelong learning **as a result of a rational cost-benefit analysis.** The main idea is that people will only invest in educational activities when this is expected to generate a return that is higher than the initial investment cost.

- *The investment cost* refers to direct costs (enrolment fees, books, transportation) as well as indirect or opportunity costs of the time spent in a learning activity (earnings foregone).

- The *benefits* consist of the expected advantages of participation in the learning activity. Lifelong learning is assumed to lead to increased productivity and thus to higher earnings, better chances of promotion, and/or new job opportunities. Also outside the workplace, participation may be beneficial (e.g. because it enlarges one's social network). Importantly, not only the expected level of the benefits matters, but also the uncertainty regarding this level. Indeed, there is no guarantee that participation in LLL will lead to the anticipated return.

Note that this evaluation of costs and benefits is expected not only to influence the position of individuals towards lifelong learning participation, but also the behaviour of their employers: often, employers bear a large share of the costs and reap part of its benefits in return, and they will thus be more inclined to support learning activities (either financially or by adapting the work schedule) when the net balance looks more attractive.

1.1.2 Psychological perspective: readiness to learn

The second perspective adds to the rational evaluation of costs and benefits an emphasis on the **psychological dispositions** that hinder or encourage learning. The main insight from this perspective is that even if the benefits seem to outweigh the costs, people may not be willing to participate in lifelong learning because of certain psychological dispositions. In particular, the attitude towards learning and the confidence in one's own ability are important determinants to understand participation in learning activities (Baert and Vanden Eynde (2014); Bybee and McCrae (2011); Keller (1987); Vanweddingen (2010)).

Indeed, it has been found that negative learning experiences may damage one's self-image as a learner (Christenson, Reschly & Wylie (2012)) and that this may indeed hamper participation in future learning activities (Beder (1990); Crossan, Field, Gallacher, and Merrill (2003); Ellsworth (1991); Hayes (1988)). Attitudes towards learning are primarily formed during initial school. Gorard (2009) describes how early school experiences accumulate into a 'learner identity': "*The experiences gained during initial schooling appear to be an important factor in shaping long-term orientations towards learning. 'Success' or 'failure' at school affects the choice of what to do post-16. Experience of school lays the foundation for what could be an enduring 'learner identity'.*"

1.1.3 In sum - three positions on life-long learning

In this report, we will use both the rational-choice and the psychological perspectives as the background for our research. Our research question will then be: **how do institutional arrangements affect both the costs and the benefits in the rational choice evaluation and the psychological dispositions underlying lifelong learning participation**?

To this end, we will integrate both perspectives into a somewhat simplified "two-step" perspective:

1. citizens first have to be 'inclined' to participate in lifelong learning;
2. those who are considering to participate will then compare the costs and the benefits of participation to finally decide whether or not they will participate.

This perspective is simplified, as in reality the evaluation of costs and benefits and the psychological dispositions on learning will be interdependent (both steps will be intertwined). However, the simplification allows us to distinguish between three distinct positions regarding life-long learning, which will be useful in our empirical research:

Group A. We will distinguish a first group which **already participates** in lifelong learning. We can thus assume that any major hindrances, both concerning costs or benefits and concerning psychological dispositions (willingness), have been resolved. From a policy perspective, this group does not require any further policy intervention. (Of course, for this group as well, secondary objectives can be formulated, such as an attempt to increase the number of hours spent in or the quality of the learning activities. However, as we discussed in our previous report, the main target in current lifelong learning policies (cf. policy targets) has mainly been to increase the *share* of the population participating in lifelong learning.)

Group B. A second group of citizens is inclined to participate in lifelong learning, but reports to have been **withheld from participation by specific barriers**. From a policy perspective, targeted policy intervention could aim at removing these specific barriers (for example, if costs are perceived as the major barrier to participation, financial incentives would be the evident policy answer).

Group C. This group consists of citizens who **do not want to participate** in lifelong learning, for example because of a negative attitude towards learning. This group is definitely the most challenging to study, as 'not being willing to participate' might be ambiguous, both in terms of what it might conceal (underlying barriers) and in terms of how it can be measured (see below).

1.2 The case of disadvantaged groups

In this report, we will in particular pay attention to the participation behaviour of 'disadvantaged' groups[3]. In the literature, several disadvantaged groups have been defined (Boeren, Nicaise, and Baert (2010); Robert (2012); Desjardins, Milana & Rubenson (2006)):

- Individuals with a low socio-economic status, consisting of
    - Low-educated individuals (i.e. not having a secondary education degree), or individuals with low skills
    - Unemployed or inactive individuals or individuals that are weakly attached to the labour market (in part-time or temporary jobs)
    - Individuals with a low occupational status
    - Individuals with a low income
- Older individuals
- Females (in particular with young children)
- Migrants[4]

To understand why these disadvantages reduce lifelong participation, we will apply the double perspective developed above.

1.2.1 Rational choice

First, from the rational-choice perspective, the evaluation of the costs and the benefits associated with lifelong learning may differ depending on one's personal situation (see Desjardins, Milana & Rubenson (2006) for a more elaborate overview)[5]:

- Regarding the costs,
    - individuals with a low income may feel different about costs than other groups;

[3] In this report, we will mostly focus on the participation behaviour of individuals with low initial attainment. However, as disadvantages often overlap (for example, individuals with lower educational attainment are on average older, have higher unemployment probabilities, and have lower incomes), we will keep a broader focus in this section.

[4] In this paper, we will not study the case of migrants in detail, both because of the rather specific context (e.g. often compulsory participation in language or integration courses) and because of the restrictions in the available data (e.g. unavailability or incomparability of data on educational qualifications obtained in the country of origin).

[5] Again, remember that this cost/benefit evaluation will not only affect the individual demand for LLL but also the supply of educational opportunities by employers.

- unemployed or inactive individuals may be particularly sensitive about costs, as there is no employer to cover (part of) these costs;
- parents, in particular females, with young children may be sensitive about the costs and/or the availability of child care.

- Regarding the benefits,
  - the skills-beget-skills hypothesis (Cunha and Heckman (2007)) postulates that learning will be less efficient for low-educated or low-skilled individuals who have to start from a more narrow skill base. Moreover, the chance that participation will not result in tangible advantages (because of dropout) is higher, and hence the uncertainty surrounding the expected return will be higher (cf. Nicaise (2003); Nicaise (2014));
  - the return to training is usually lower in low status jobs (e.g. routine labour);
  - individuals that are unemployed, inactive or only weakly attached to the labour market will be less certain about the returns generated by the learning activities, compared to employees participating in activities with an immediate link to their current job;
  - older respondents have fewer long-term prospects in the labour market, and hence the investment in LLL will have less time to yield benefits;[6]
  - groups with low income may have other time preferences: they might prefer to work and earn money now instead of investing in uncertain future returns (Nicaise and Bollens (1998)).

1.2.2 Psychological dispositions

Secondly, psychological barriers to lifelong learning are particularly important for low educated individuals. To the extent that low educational attainment (defined as not having a secondary education degree) is the result of a less successful educational career (cf. the 'educational life course perspective' by Lamb, Markussen, Teese, Sandberg and Polesel (2010)), individuals with low educational attainment may be more likely to translate these negative educational experiences into a lower readiness to participate in lifelong learning (Boeren, Holford, Nicaise, and Baert (2012); Gorard and Smith (2004); Illeris (2003)). For example, in a recent Flemish sample, Kyndt, Govaerts, and Dochy (2014) observed how low educated respondents associated the very idea of 'learning' with negative connotations due to previous experiences of failure.

It has been suggested that such negative attitudes towards learning are the main explanation for low participation in lifelong learning among the least educated. For example, Djait and Boey (2014) observed that for low educated individuals a low interest in learning is a more important barriers to lifelong learning than costs or availability.

[6] Further note that older respondents may also have lost some of their skills over time (obsolesce); for older respondents in this case, the same obstacles as for low-educated and low-skilled respondents may apply (cf. first bullet), even if these respondents possess a higher qualification (Boeren and Nicaise (2011); Tuijnman & Belanger (1997)).

1.3 Policy responses

In this section we will briefly describe the most common policies that countries have developed to tackle the barriers inhibiting participation in lifelong learning, in particular among disadvantaged groups. Our main source is the recent report by Eurydice (2015) in which the policies on lifelong learning of all European Union member states are compared in detail.

1.3.1 Modularisation

One of the most widespread approaches to engage more disadvantaged groups in LLL is to offer modular programmes. The assumed advantages of modularisation are double: first, splitting up programmes into smaller units helps to overcome time constraints; secondly, offering more positive experiences to participants by rewarding these smaller units reduces the probability of dropout.

As Figure 1 shows, most European countries have made LLL programmes modular to some degree. Flanders belongs to the countries where this policy has been most ambitious and effective (see also Douterlungne and Wouters (2002)).

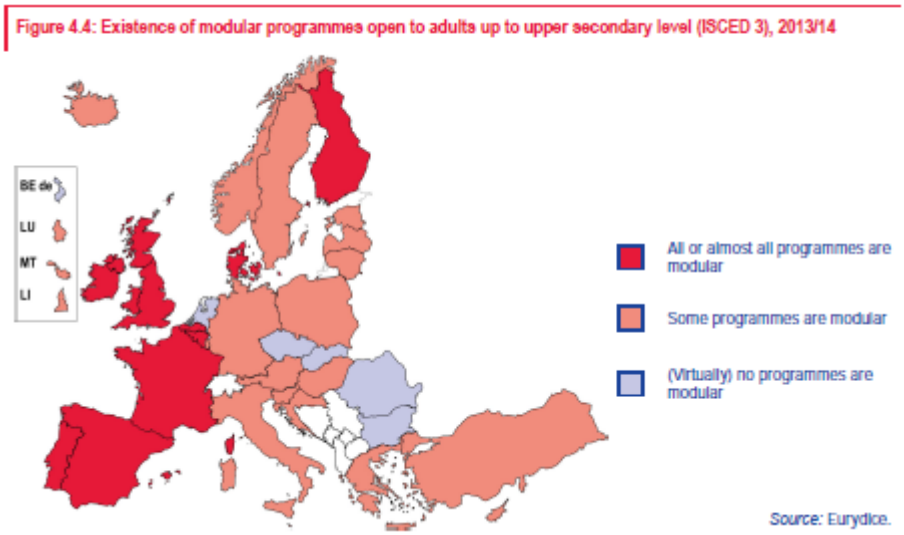


Figure 1 Modularisation of LLL programmes in the European Union (Eurydice, 2015)

1.3.2 Financial interventions

1.3.2.1 Regarding the individual

According to Eurydice (2015), public co-funding plays an important role in providing learning opportunities to disadvantaged groups that face difficulties in covering the cost of learning activities. Co-funding can take many different approaches, such as public subsidies to providers of training or vouchers to be used in payment for training courses. Figure 2 shows that in most countries such co-funding schemes do exist. However, the well-known Matthew effect implies that universal schemes would often be utilised primarily by advantaged individuals. Hence, in order to be most effective in raising lifelong learning participation among disadvantaged groups, some countries target policy

interventions at these groups. In Flanders too, public funding is well developed and targeted at disadvantaged groups (e.g. funding of basic education centres; *Opleidingscheques* with co-funding depending on the socio-economic status of the learner).

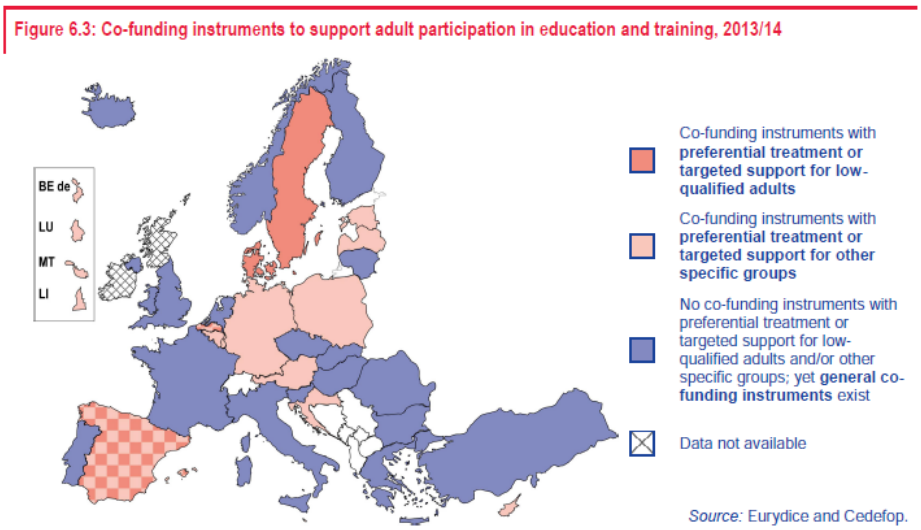


Figure 2 **Co-funding instruments in the European Union (Eurydice, 2015); 'other specific groups' refers to unemployed jobseekers, non-native speakers and older employees**

1.3.2.2 Regarding the employer

As disadvantaged groups are often less likely to generate high returns to lifelong learning, this may also prevent employers from developing an adequate supply of educational opportunities for disadvantaged groups (Boeren, Nicaise, and Baert (2010)), calling for public intervention as well.

In general, public co-funding and coordination of the training supply by employers is a crucial component of the varieties of capitalism perspective on LLL, where pooling training efforts is seen as a way to avoid underinvestment as a result of the threat of poaching (see Nicaise (2003); Desjardins and Rubenson (2013); Lavrijsen and Nicaise (2015b); Rees (2013)). An example of this approach in Flanders are the '*sectorfondsen*', financed by employer contributions and jointly governed by employers and trade unions, that play a key role in developing and redistributing training opportunities (Sels (2009)). Disadvantaged groups may benefit from such arrangements as they may counteract the natural inclination of employers to direct training opportunities solely to more advantaged employees (Nicaise (2014); Desjardins and Rubenson (2013)).

Figure 3 summarizes the current availability of public co-funding schemes that encourage employers to invest in training for disadvantaged employees in Europe. Again, Flanders belongs to the countries where such schemes include preferential treatment of disadvantaged groups.

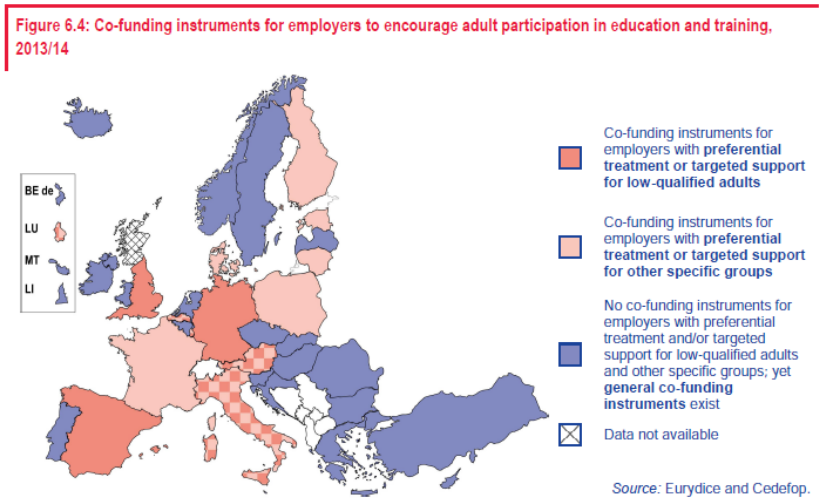


Figure 3 Co-funding of employers (Eurydice, 2015)

Chapter 2 Some empirical issues

In this chapter, we will describe some issues to be encountered in the empirical identification of the barriers to lifelong learning.

2.1 Observing barriers: statistical patterns or self-reporting?

A first issue concerns the way barriers to learning can be observed. In the literature, two main strategies have been used.

A first option has been to explore the observed social inequalities in lifelong learning participation. For example, we can compare the participation among respondents from a different educational backgrounds, age, gender, employment status or family situation. This is the approach we used in Lavrijsen and Nicaise (2015b), where we run a logistic regression explaining the probability of participation in lifelong learning on the basis of the education level of the respondent, his age and sex. Figure 4 reveals that the coefficient of educational level is positive everywhere, meaning that respondents with higher qualifications participate more, and that this effect seemed strongest in the Central and Eastern European countries and less strong in the Nordics, the Netherlands and the UK and Ireland.

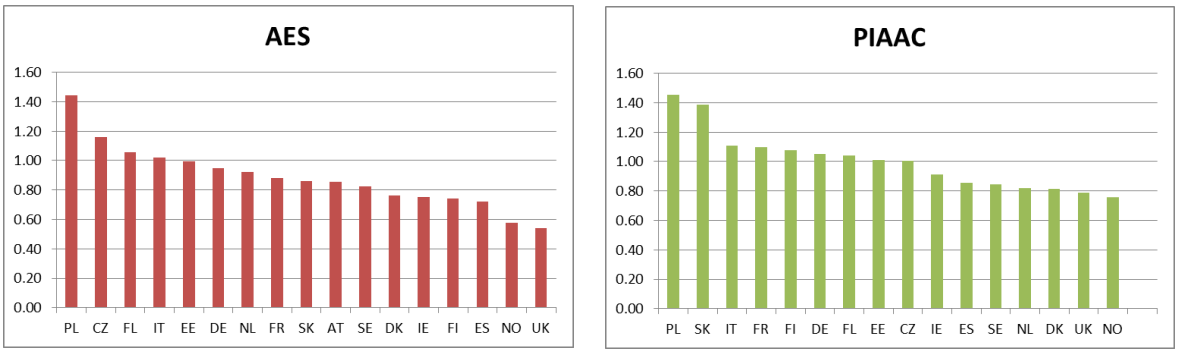


Figure 4 Size of the effect of initial education on LLL participation (from Lavrijsen and Nicaise (2015b))

More advanced applications of this approach has repeated this statistical estimation for a wider range of variables and then has combined the resulting patterns through the use of cluster analysis techniques to construct groups of countries that show comparable patterns. By comparing the observed inequalities to the institutional arrangements and the lifelong learning policies from the countries under study, the effect of these arrangements on the accessibility of adult education can be observed. For example, for formal adult education, Robert (2012) and Hefler, Ringler, Rammel & Markowitsch (2010) have applied this approach to identify a cluster of countries with relatively accessible formal adult education systems: in particular the Scandinavian countries,, but also Flanders.

One of the drawbacks of this approach is that it has to refer solely on the observed inequalities in the *outcome* of the process behind the decision to (not) participate in lifelong learning, but that it does not

have any direct information on this process itself. For example: when we observe that women participate more in countries where child care is more accessible, we can assume a straightforward relationship between the institutional arrangement and the observed participation pattern, but we lack direct evidence on this relationship. This is why a second line of research uses information from surveys in which barriers to lifelong learning participation are directly reported by respondents, instead of simply observing patterns in participation. This kind of research thus draws on surveys that explicitly *ask* respondents why they did (not) participate in lifelong learning. Notable examples of this approach include Desjardins, Milana & Rubenson (2006), Rubenson and Desjardins (2009), Robert, Sagi, and Balogh (2010) and Boeren and Nicaise (2011). For example, Table 1 shows results from two surveys (IALS and a Eurobarometer 2003 wave) in which respondents could directly report which barriers inhibited lifelong learning participation.

Table 1 Self-reported barriers in the IALS and the Eurobarometer (2003)

Source: Desjardins, Milana & Rubenson (2006) for the IALS data, Rubenson and Desjardins (2009) **for the Eurobarometer data). Barriers reported by more than 20% of the respondents are underlined.**

Typology Cross (1981)	IALS 1994-1998	Eurobarometer 2003

Situational	• Lack of time (50%)
	• Too busy at work (20%)
	• Family responsibility (20%)
	• Lack of employer support
		• Job
		  ○ My job commitments take up too much energy (20%)
		  ○ My employer would not support me
		• Family
		  ○ My family commitments take too much energy (20%)
		  ○ My family would not support me
		  ○ I would need some equipment that I do not have (computer, etc.)

Institutional	• Money (20%) • Not available • Lack of qualifications • Inconvenient time	• I lack the necessary qualifications to take up the studies or training course I would like to • There are no courses that suit my needs • There are no courses available nearby, I could not get to them • I would not want to go back to something that is like school; also in dispositional
Dispositional	• Language problems • Health	• I would have to give up some or all of my free time or leisure activities • I would not like people to know about it in case I didn't do well • I think I am too old to learn • I have never been good at studying • I do not know what I could do that would be interesting or useful • I would not want to go back to something that is like school; also in institutional • I have never wanted to do any studies or training (spontaneous)

This second approach thus adds more direct understanding of the effect of institutional arrangements on lifelong learning participation; for example, we can consider whether women in countries with accessible child care systems indeed report less frequently that family responsibilities prevented them from participating in lifelong learning. Hence, in the current report, we will follow this approach and add to the existing literature by using two recent surveys containing self-reported information on barriers to lifelong learning participation.

2.2 Pitfalls in the interpretation of self-reported barriers

However, note that there are also some pitfalls with using self-reported barriers as an information source.

First, it has been argued that self-reported barriers do not fully reflect the underlying obstacle. For example, barriers such as 'lack of time' or 'costs' are not very informative as such. They rather point at an underlying evaluation of priorities: respondents apparently mean that other activities required more money resp. time (Rubenson and Desjardins (2009)). Note that in particular lack of time is usually a very 'popular' barrier (cf. Table 1); the ambiguity of this barrier thus restricts our insight on how policies should be designed in order to remove the obstacles to lifelong learning.

Secondly, many surveys have tended to accept answers such as '*I did not participate in lifelong learning because I was not interested in participation*' or '*I did not participate in lifelong learning because I was willing to participate*' as a barrier. However, this again tells us little about the underlying psychological dispositions that are *causing* this lack of interest. Moreover, the share of respondents which are in this position is relatively high (see below). Hence, it will be difficult to accurately assess the importance of psychological barriers to lifelong learning unless further information on these barriers is collected.

Thirdly, self-reports always bear the risk of a social desirability bias: respondents are often more eager to explain their lack of participation by reference to barriers outside their responsibility. It has been argued that this in particular leads to an underreporting of dispositional barriers: instead of admitting that one was not very eager to participate, it might be more comfortable to blame non-participation on external barriers (costs, family responsibility, etc.)

Finally, research on self-reported barriers has often attempted to structure the wide range of barriers into a limited number of categories. In the literature, by far the most popular typology was the one that was developed some thirty years ago by Cross (1981). Cross distinguished between three groups of barriers cf. Table 1):

1. Situational barriers that arise from one's situation in life, such as having no time because of family duties or receiving no support from the employer;
2. Institutional practices and procedures that hinder participation, such as finding no appropriate training offered reasonable distance or being confronted with high enrolment fees;
3. Dispositional barriers, i.e. attitudes and dispositions towards learning, such as not being convinced of the value of LLL or previous negative experiences with learning.

This typology seems to some extent equivalent to the double perspective from Boeren, Nicaise, and Baert (2010) that we developed above, with the group of dispositional barriers corresponding to the psychological perspective and the other two groups mostly citing barriers from the rational-choice perspective. However, we would argue that the identification of a distinct group of "institutional" barriers by Cross (1981) is to some extent artificial. For example, why should a barrier such as 'having no time because of family duties' being labelled as a situational barrier, when it could just as well be regarded as the result of a specific institutional arrangement (the unavailability of affordable child care)? The other way round, why should 'being confronted with high enrolment fees' being labelled as an institutional practice, while this is to some extent also linked to the specific situation (economic

disadvantage) that one lives in? One can we even argue that dispositional barriers can also be affected by institutional arrangements, such as the design of the educational system (see below).

Hence, we would rather propose that *all* obstacles that people are confronted with when considering participation are in some way the result of a certain institutional arrangement. Instead of isolating a specific type of barriers as 'institutional', such as in the typology of Cross, we will use the two perspectives (rational choice / psychological) developed above and assess how institutional arrangements affect the barriers in these two dimensions, even if this somewhat limits comparability with the earlier literature.

2.3 Assessing the quality of the Adult Education Survey and PIAAC

In this report, we will use two recent surveys containing self-reported assessments of barriers: the Adult Education Survey and PIAAC. The lifelong learning participation patterns observed in these surveys have already been analysed into detail in Lavrijsen and Nicaise (2015b). In this report, we will focus on the reasons respondents reported to explain their non-participation in lifelong learning. Both surveys contain detailed information on these obstacles. Moreover, both surveys are relatively comparable as they follow more or less the same structure in their questionnaires (see below). In the following sections, we will further introduce both surveys and try to assess the quality of the data involved.

2.3.1 Adult Education Survey

The Adult Education Survey (AES) is a household survey in the European Union focusing on participation in education and training activities by respondents aged 25 to 64. The last wave of the AES was collected in 2011. The following 17 Western-European countries[7] are represented in the AES: AT, DE, DK, EL, ES, FI, FL, FR, IE, IT, LU, NL, NO, PT, SE, UK, WL.

2.3.1.1 The data collection according to the guidelines

The guidelines for collection of the AES-data are centrally approved by Eurostat. According to these guidelines, the AES should ask respondents about the barriers encountered when considering participation in the following way:

[7] As in previous reports, we limit the sample to Western countries for reasons of comparability and availability of information. We also neglect respondents born outside the country of survey. Further note that the AES-data delivered by Eurostat do not contain information on the region the respondent lives in, due to the anonymization procedure at Eurostat. Hence, we were not able to identify the respondents from the Flemish resp. Walloon Region in the AES-sample. As a proxy, we used the language in which the survey was completed to identify the Flemish respondents from the Belgian AES-sample. This delimitation may differ from the respondents living in the Flemish Region because of 1) Dutch-speaking respondents living in Brussels and 2) non-Dutch-speaking respondents living in the Flemish Region (although in principle, such persons were administered the Dutch survey). Hence, in Lavrijsen and Nicaise (2015) we compared the observed participation patterns to the patterns derived from the source data of the AES (i.e. those originally collected by AD Statistiek), which still contain the regional information. This comparison showed that the deviations caused by the identification of Flemish respondents by language were very small. Hence, we will again apply the identification by language in this report.

1. All respondents are asked:
    1. Whether they participated in lifelong learning during the past 12 months
    2. Whether they would have liked to participate (more) in LLL activities

2. The combination of both questions leads to four categories of respondents:
    1. Participated + did not want to participate more
    2. Participated + wanted to participate more
    3. Did not participate + did not want to participate
    4. Did not participate + wanted to participate

3. Information about the obstacles to participation is collected. However, at this point, the way that the survey proceeds depends on the category to which the respondent belongs:

    3.1. **Groups 2 and 4** (who stated that they wanted to participate more) are immediately presented the following list of possible obstacles (with multiple answers possible):

    Difficulty 1. *Prerequisites: You did not have the prerequisites (in terms of entrance requirements)*
    Difficulty 2. *Cost: Training was too expensive/Cost was difficult to afford*
    Difficulty 3. *Lack of employer's support or lack of public services support*
    Difficulty 4. *Schedule: Training conflicted with work schedule/was organized at inconvenient time*
    Difficulty 5. *Distance: Training took place at a distance hard to reach*
    Difficulty 6. *No access to a computer or internet for distance learning.*
    Difficulty 7. *Family responsibilities: You didn't have time due to family responsibilities*
    Difficulty 8. *Your health or age*
    Difficulty 9. *Other personal reasons*
    Difficulty 10. *No suitable education or training activity*
    Difficulty 0. *None of the difficulties above*

    3.2. **Groups 1 and 3** (who stated that they did *not want* to participate more) are presented the same list with potential difficulties[8], and then are asked whether *any* of these reasons for not wanting to participate more apply.

    3.2.1. If they state that there weren't any specific difficulties, but that they just did not feel any need to participate, then in the dataset '*Difficulty 11 - No need for education and training*' is registered, and this section of the survey ends.
    3.2.2. If they report that there indeed was a specific reason for not wanting to participate (more), the according difficulty should be registered.

4. For those who reported at least one difficulty, the **most important difficulty** had to be selected. (Note that for those in groups 1 and 3 who selected difficulty 11 (no need for education and training), difficulty 11 should also be the main difficulty.)

[8] The Eurostat-guidelines explicitly state that is "*strongly advised to list the potential difficulties in the question before getting to the question collecting the ones which apply. A person might indeed reply he/she had no difficulty if he/she does not know about the list (e.g. health) while he/she would definitely select one difficulty if a list was proposed to him/her.*"

2.3.1.2 The AES-data and the three positions on LLL

In principle, the data collection from the AES should allow us to identify the three groups defined in the previous Chapter (§1.1.3), as in Table 2.

Table 2 Proposed mapping of the three positions on lifelong learning to the AES data

Three positions on lifelong learning	AES-data
Group A (participation)	Group 1 Group 2
Group B (specific barrier)	Group 3 who did *not* indicate diff. 11 (no need) (=who indicated a specific barrier) Group 4
Group C (no interest)	Group 3 who *did* indicate diff. 11 (no need)

Note that in this identification, respondents from Group 3 who did *not* indicate 'diff. 11 – no need' are treated as being interested in participation. These respondents first stated that they did *not* want to participate, but on a second thought they did name a specific barrier to explain their position. In our view, such a position is very close to that of respondents who immediately stated that there was a specific barrier that prevented them from participating (even though they wanted). For example, what is the difference between someone who stated *'I did not want to participate because of the costs*' (=Group 3) and someone who stated '*I wanted to participate but I did not, because of the costs*' (=Group 4)?

2.3.1.3 Observed deviations from the expected patterns

Each country is responsible for the collection of the data according to the central guidelines. **However, and very unfortunately, the dataset from the Adult Education Survey 2011 seems to contain several country-specific deviations from the official guidelines.** Apparently, the translation of the above procedure into national questionnaires differed quite drastically among countries.
First, there seem to have been some issues with the categorization into 4 different groups. Table 3 makes clear that in particular the UK and LU show large non-response for this variable; these countries were removed from the further analysis. Secondly, in other countries a smaller number of cases were misclassified (i.e. non-participants who are registered as belonging to groups 1 or 2); these respondents have also been removed from the dataset.

Table 3 Non-response and irregularities for the classification into 4 groups in the AES

	Non-participants						Participants				
	Missing	Group 1	Group 2	Group 3	Group 4		Missing	Group 1	Group 2	Group 3	Group 4
AT	2.56	0	0	82.2	15.24		3.08	70.67	26.25	0	0
DE	0.45	0	0	88.39	11.16		1.03	74.27	24.7	0	0
DK	15.69	0.43	0.07	52.2	31.61		15.5	28.84	55.66	0	0
EL	10.54	0	0	72.69	16.77		15.35	44.04	40.61	0	0
ES	0.14	0	0	84.76	15.1		0.14	74.32	25.54	0	0
FI	0.32	0	0	76.34	23.35		0.15	66.6	33.25	0	0
FL	7.12	0	0	76.36	16.52		5.34	51.16	43.51	0	0

FR	0.03	0.03	0.03	73.12	26.78		0.03	58.33	41.64	0	0
IE	6.79	0	0	19.99	73.22		0.61	23.15	76.25	0	0
IT	0.84	0.24	0.21	71.21	27.49		0.36	63.31	36.34	0	0
LU	23.4	0	0	39.37	37.23		13.67	33.82	52.51	0	0
NL	0.42	0	0	79.65	19.93		0.05	76.54	23.41	0	0
NO	0.99	0.3	0.49	79.82	18.4		0.6	39.74	59.66	0	0
PT	0	0	0	87.09	12.91		0	70.76	29.24	0	0
SE	0.47	0	0	72.81	26.72		0.49	61.81	37.7	0	0
UK	100	0	0	0	0		100	0	0	0	0
WL	4.77	0	0	70.57	24.66		4.25	49.03	46.72	0	0

Secondly, Table 4 shows that in AT and NO *no* respondents from Group 1 picked difficulty 11, while in DK *all* of them did. We will leave these three countries out of the analysis in this section as well. This leaves 12 countries to consider.

Table 4 Percentage of AES respondents in groups 1 and 3 ("not wanting") who picked Difficulty 11 ("no need")

	Group 1	Group 3		Group 1	Group 3
DE	69.33	73.94	**NL**	52.99	55.29
EL	24.77	40.67	**PT**	1.88	4.03
ES	14.61	11.16	**SE**	63.01	60.26
FI	39.44	34.58	**WL**	21.04	38.8
FL	38.47	57.08			
FR	74.85	81.73	**AT**	0	0
IE	7.13	5.2	**NO**	0	60.47
IT	9.88	17.44	**DK**	100	100

Thirdly, in particular among the respondents from groups 1 and 3 who reported *Difficulty 11 - No need*, the AES-dataset contains a further number of unusual patterns. For example: according to the guidelines from the survey, these respondents cannot chose other difficulties. However, we do not observe this pattern in most countries: the average number of difficulties reported by this group of respondents is equal to one in four countries (including the two Belgian regions; Table 5). The Belgian regions are also the only ones that complied with the guideline that everyone in this group should have named Difficulty 11 as their "most important" difficulty (note in particular the very low values for EL and FI: almost no-one complies with the guidelines in these countries).

Table 5 **Average number of difficulties reported by respondents in groups 1 & 3 who selected diff. 11 (according to the guidelines, this should be 1), and share of them that selected diff. 11 as the main difficulty (according to the guidelines, this should be 100%)**

	Group1		Group3	
	Average number	% with main difficulty = 11	Average number	% with main difficulty = 11
FL	**1**	**100**	**1**	**100**
WL	**1**	**100**	**1**	**100**
FR	**1**	77	**1**	74
IE	**1**	-	**1**	-
DE	**1**	**100**	2.75	53
EL	1.93	0	2.48	0
ES	1.23	88	1.27	89
FI	1.83	5	1.90	2
IT	2.10	80	2.20	76
NL	2.26	62	2.36	61
PT	1.56	75	1.64	79
SE	1.18	89	1.21	87

2.3.1.4 Explaining deviations by considering the national questionnaires

To understand these deviations from the guidelines, we analysed four national questionnaires in detail: the surveys used in Flanders, the Netherlands, Germany and Sweden. The full analysis can be found in the Appendix to this report. The conclusions are that:

- Only in Flanders, the Eurostat-guidelines were fully implemented.
- In the Netherlands, respondents from groups 1 and 3 who selected difficulty 11 *could still choose other difficulties later on in the questionnaire*, and they could also chose another difficulty as their main difficulty - which explains why the average was above 1 in Table 5 and why not all these respondents selected difficulty 11 as their main difficulty. This is a deviation from the central guideline.
- In Germany
    - respondents from group 1 selecting difficulty 11 were treated according to the Eurostat-guidelines (which explains why this group indeed exhibited the expected patterns in Table 5)
    - respondents from group 3 selecting difficulty 11 could check other difficulties as well, and could also chose another difficulty as their main difficulty (as in the Netherlands), which again explains why the average was above 1 in Table 5. This is a deviation from the central guideline.
- In Sweden, respondents from groups 1 and 3 selecting difficulty 11 could check other difficulties as well, but only when they indicated this immediately - which explains why the average was only slightly above 1 in Table 5. This is a deviation from the central guideline.

2.3.1.5 Conclusion

In sum, the observed deviations from the expected patterns seem to be due to flaws in the translation of the Eurostat-guidelines into national questionnaires. This of course weakens the quality of the data and undermines any further analysis. In particular, the data quality of the AES does not seem to allow investigating Group C ('no interest') into detail. Due to the variations in the structure and the sequence of the questionnaire, respondents in this group are hardly comparable across countries. For example, in Belgium, this group contains (only) those respondents that reported to have felt no need after being confronted with a list of barriers- and when they reported to feel 'no need', this immediately led to the end of this section of the survey). By contrast, in the Netherlands, respondents could just pick 'no need' as one of multiple barriers (which were moreover presented to them one by one instead of all together). Such irregularities make data comparison across countries quite fuzzy: how can we interpret a Dutch respondent who reported to 'just feel no need' on one hand and that 'cost was a main obstacle' on the other? These irregularities indeed seem to imply very large differences between countries: the share of respondents in Group 3 that selected Difficulty 11 ranged between 5% (Ireland) and 82% (France) (see Table 4).

Hence, in our further analysis, we will mainly have to limit our analysis of the AES-data to those respondents who reported only one specific barrier (Group B).

2.3.2 PIAAC

The Programme for the international Assessment of Adult Competencies (PIAAC), a survey conducted by the OECD in 2011-2012, aimed primarily at measuring the literacy and numeracy skills of adults aged 15 to 65, but also paid attention to LLL participation.

2.3.2.1 The data collection according to the guidelines

1. As in the AES, all PIAAC-respondents were asked whether they participated in lifelong learning during the preceding 12 months, and whether they would have liked to participate (more) in LLL activities.

2. The combination of both questions is again summarized in four categories of respondents:
    1. Participated + did not want to participate more
    2. Participated + wanted to participate more
    3. Did not participate + did not want to participate
    4. Did not participate + wanted to participate

3. However, the next step differs from the AES
    3.1. *Respondents in Groups 2 and 4* (who stated that they wanted to participate more) were again presented a list of possible obstacles. This list was relatively similar to the list suggested in the AES (see Table 6). However, in contrast to the AES (were *all* possible barriers applying have to be checked), PIAAC asks only about one (arguably the most important) difficulty that was encountered by the respondent.

Table 6 Comparison of the suggested barriers in the AES and PIAAC

Suggested barriers AES		Suggested barriers PIAAC
Difficulty 1. Prerequisites: You did not have the prerequisites (in terms of entrance requirements)	=	Difficulty 1. Prerequisites: I did not have the prerequisites
Difficulty 2. Cost: Training was too expensive/Cost was difficult to afford	=	Difficulty 2. Cost: Education or training was too expensive/I could not afford it
Difficulty 3. Lack of employer's support or lack of public services support	=	Difficulty 3. Lack of employer's support
Difficulty 4. Schedule: Training conflicted with work schedule/was organized at inconvenient time	Similar, but PIAAC excludes "inconvenient time"	Difficulty 4. Schedule: I was too busy at work
Difficulty 5. Distance: Training took place at a distance hard to reach	Similar, but PIAAC includes "inconvenient time"	Difficulty 5. Distance**/time**: The course or programme was offered at an inconvenient time or place
Difficulty 6. No access to a computer or internet for distance learning.	No similar PIAAC-suggestion	
Difficulty 7. Family responsibilities: You didn't have time due to family responsibilities	=	Difficulty **6**. Family responsibilities:
Difficulty 8. Your health or age	No similar PIAAC-suggestion	
Difficulty 9. Other personal reasons	No similar PIAAC-suggestion	
Difficulty 10. No suitable education or training activity	No similar PIAAC-suggestion	
	No similar AES-suggestion	Difficulty 7. Something unexpected came up that prevented me from taking education or training

3.2. *In contrast to the AES, respondents in Groups 1 and 3* were not asked to report any specific difficulties.

2.3.2.2 The PIAAC-data and the three positions on LLL

In principle, the data collection from PIAAC again allows us to identify the three groups defined in the previous Chapter (§1.1.3), as in Table 7.

Table 7 Mapping the three positions on lifelong learning to the PIAAC data

Three positions on lifelong learning	PIAAC-data
Group A (participation)	Group 1 Group 2
Group B (specific barrier)	Group 4
Group C (no interest)	Group 3

However, note that given the PIAAC-guidelines, *all* respondents who indicated that they were not willing to participate (=Group 3) were immediately registered as feeling no need to participate, without any specific difficulty responsible for this. However, as we saw in Table 4, data from the AES suggested that large proportions of these groups in fact would recall very specific difficulties for not wanting to participate if they had been presented a list of possible difficulties: only a fraction of those in the AES that first indicated to be in Group 3 (not wanting) also recorded difficulty 11 (no need) on a second thought. Hence, we expect that the size of the Group C will be overestimated in PIAAC with this scheme.

Finally, note that an overall drawback of PIAAC is that the data are relatively poorly documented (cf. Lavrijsen and Nicaise (2015b)). For example, the codebook does not contain elaborate descriptions of the variables and no information is delivered on the questionnaires used in the different countries. In

the light of the sensitiveness of the assessment of barriers to methodological issues (cf. the deviations observed in the AES), this may impede a full understanding of country-specific issues in PIAAC as well.

Chapter 3 Empirical results from the AES and PIAAC

In this Chapter, we will report the main patterns that can be observed on the prevalence of self-reported barriers to lifelong learning participation in AES and in PIAAC, which were already introduced in the previous Chapter.

3.1 Country selection and sample size

As in previous reports, we limit the sample of both surveys to Western-European countries for reasons of comparability and availability of information, and we neglect respondents born outside the country of survey.

Of the 17 Western-European countries represented in the AES, we do not consider the UK and LU due to a large number of missings in the categorisation into the 4 groups (which is the starting point for any further analysis). Nor do we consider Ireland, due to a number of peculiar patterns in their data (see e.g. Table 4 above; further analysis also revealed that Ireland was an outlier in the number of barriers reported and that data on the main barriers were largely missing). This leaves 14 countries in our study (Table 8).

While the PIAAC-sample contains data on 15-65 year olds, we excluded PIAAC-respondents aged below 25 years (to ensure some comparability with the AES). Unlike the AES-sample, PIAAC does not have information on EL, PT and WL (Walloon Region). By contrast, PIAAC has accurate information on the UK and IE. Hence, compared with 14 countries in the AES, we will have a sample of 13 in PIAAC (of which 11 are overlapping (Table 8)). Table 8 shows that the resulting samples are much smaller in PIAAC than in the AES.

Table 8 Sample sizes in the Adult Education Survey and PIAAC (25-65)

Country	AES		PIAAC	
	Sample size	Size group B	Sample size	Size group B
AT	4,930	2,475	3,523	216
DE	6,167	1,060	3,747	259
DK	3,083	439	4,899	321
EL	4,825	2,950	-	-
ES	15,794	8,986	4,306	474
FI	3,597	1,152	4,363	244
FL	2,948	934	3,714	182
FR	12,509	2,554	5,053	395
IE	-	-	4,166	452
IT	8,622	4,598	3,676	266
NL	3,030	666	3,779	165
NO	2,649	505	3,417	174
PT	11,308	477	-	-
SE	3,081	996	2,975	173
WL	2,187	2,554	-	-
UK	-	-	6,733	438
Total	84,730	30,346	54,351	3,759

3.2 The importance of the willingness to participate

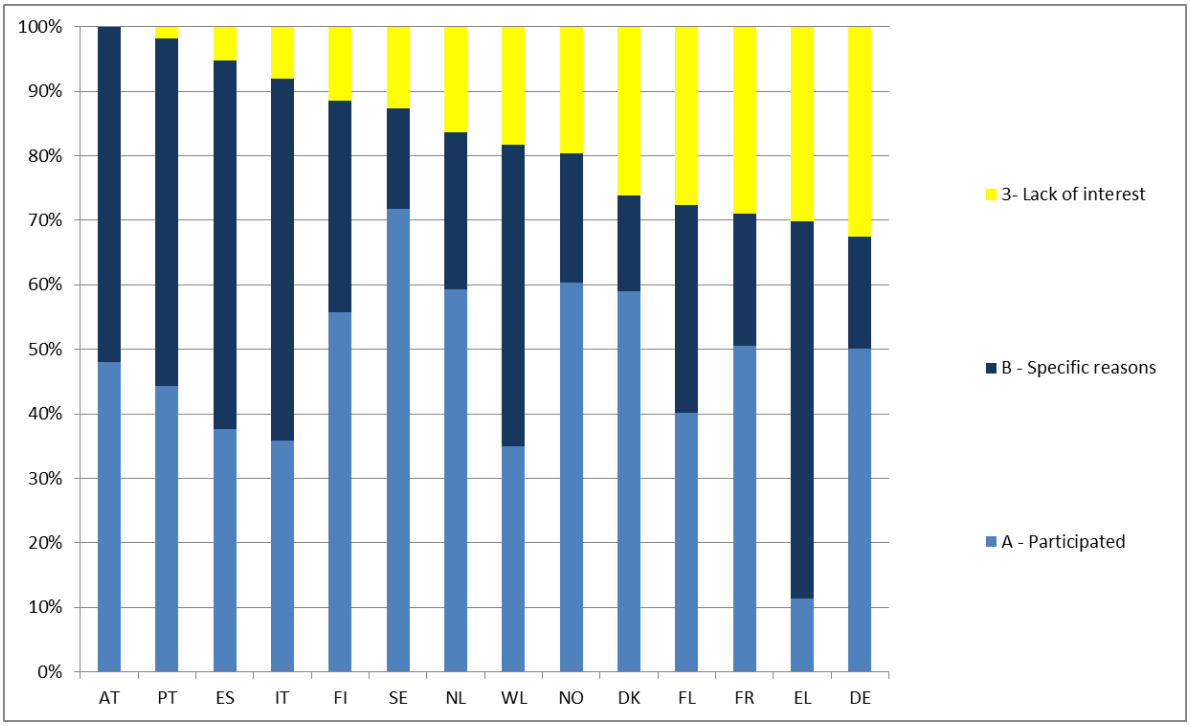
As explained above, we will limit our main analyses in this Chapter to respondents who reported a specific barrier to explain their non-participation, i.e. Group B. Figure 5 contains the distribution of respondents over the 'three positions on lifelong learning' defined above. Note that in particular the results from the AES probably have been affected by the observed irregularities in the translation of the guidelines concerning the applicable variable (see above); hence, we will pay most attention to the PIAAC-data (lower panel). Note, however, that although the PIAAC-data are not subject to a similar problem, PIAAC considered everybody who did not want to start a learning activity as 'not interested', which probably is an overestimation of Group C, as we know from the AES that a sizeable share of these respondents probably would report a very specific barrier to explain why they did not want to participate (see Table 4 above).

With these caveats in mind, a number of (preliminary) conclusions can be drawn from the figures below.

First, overall, the *group who indicated not to participate because of a 'lack of interest' (group C) seems to be very significant* (in both cases)**.** Hence, when restricting our analysis to the group who did report a specific barrier, we will have to keep in mind that this refers only to a small segment of the population (cf. the sample sizes for Group B in Table 8): a considerable part of the population does not report any

specific barrier. Just being ‘not willing’ to participate seems to be a more frequent obstacle to lifelong learning than any specific barrier.

Secondly, for the PIAAC-data, the Nordic countries report the smallest share of respondents not wanting to participate in lifelong learning. Apparently, these countries have best succeeded in promoting the interest in lifelong learning among its citizens. Indeed, Figure 5 seems to suggest that the real difference between the Nordics, with their high participation figures, and the other countries may not be found in the policies that have removed specific barriers to lifelong learning, such as cost issues or family responsibilities. Indeed, the segment of the sample from these countries that still reports such a specific barrier is comparable to most other countries (including Flanders). The real difference rather seems to relate to the size of Group C – those who expressed that they did not want to participate in lifelong learning.



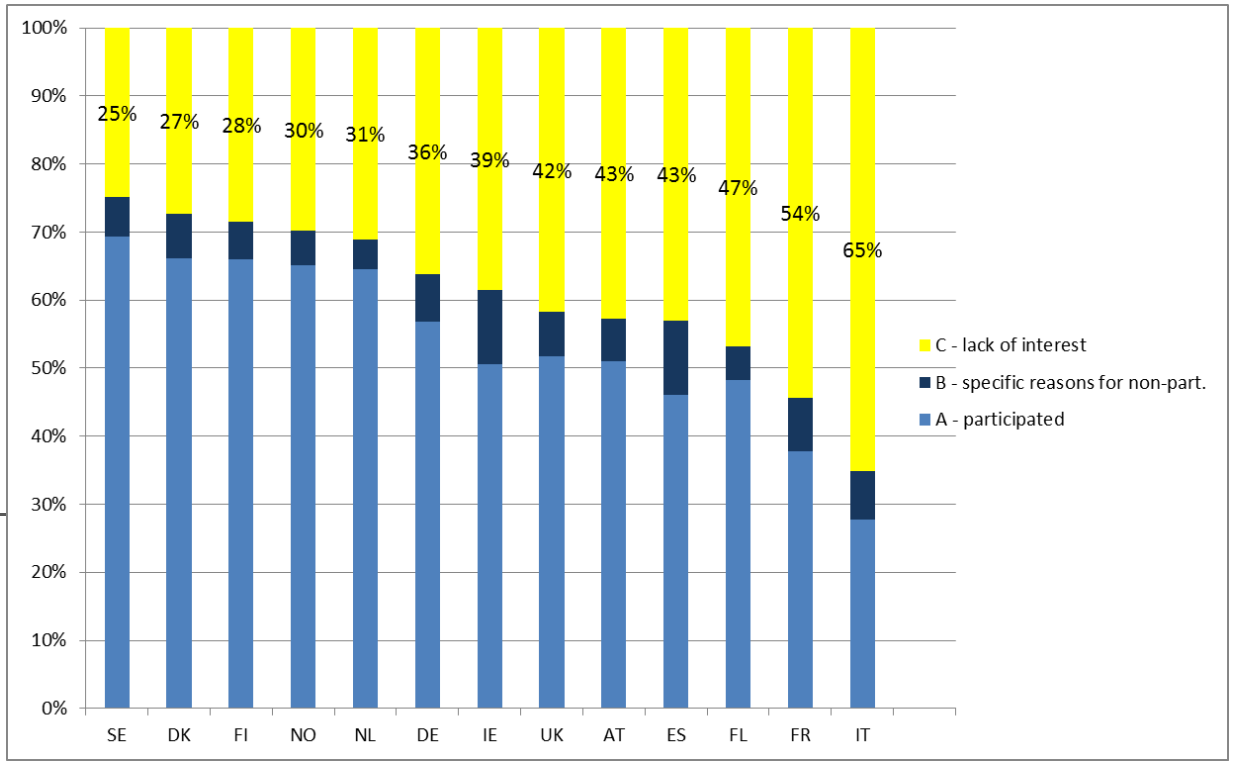


Figure 5 **Distribution of the sample between respondents not willing to participate (labelled), respondents reporting a specific reason for not participating, and participants. Source: AES (above - affected by irregularities) and PIAAC (below)**

The above observations seem to be even more valid when we restrict the sample to low-educated respondents. As Figure 6 shows, between 48% and 83% of the low qualified respondents reported not to participate in lifelong learning because they did not want to; by contrast, only about 10% of them reported to have been withheld by a specific barrier. Again, the Nordic countries have the smallest proportions of low-educated respondents not willing to participate.

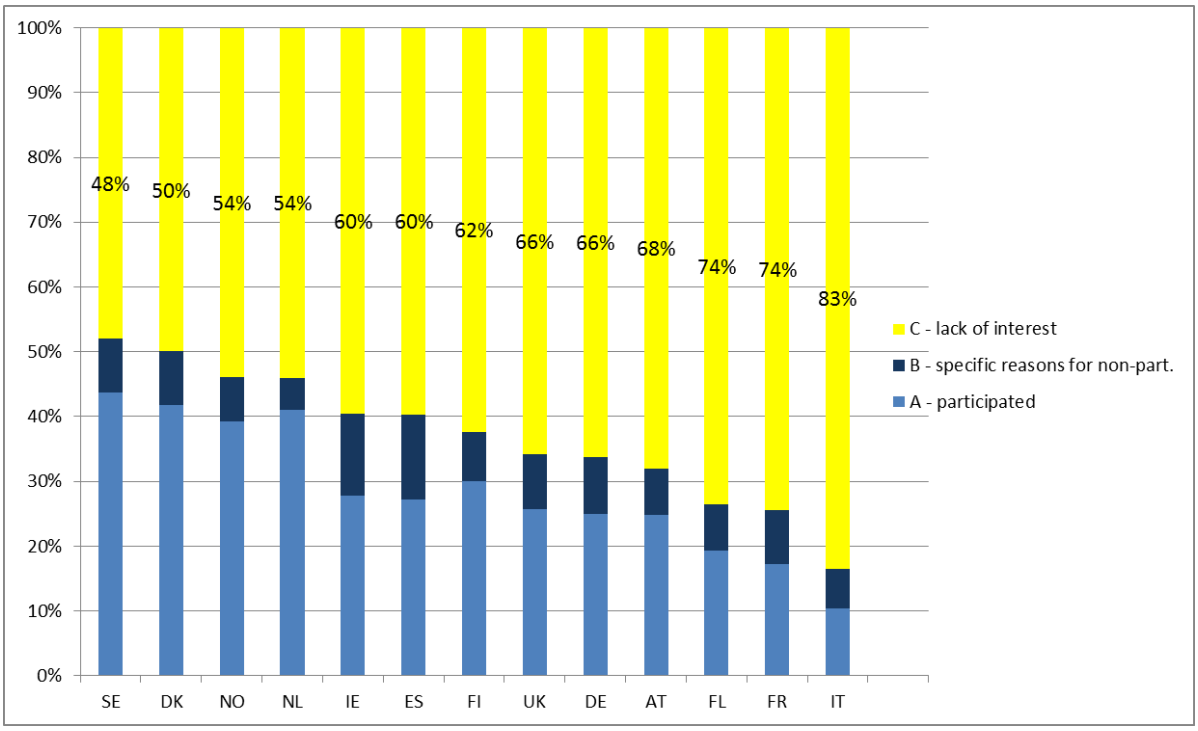


Figure 6 **Distribution of low-educated respondents over respondents not willing to participate (labelled), respondents reporting a specific reason for not participating, and participants. Source: PIAAC**

3.3 Specific barriers reported for not participating (AES)

We will now turn to describing the specific barriers that withheld respondents in Group B (who were interested in participation) from participating. Note that the AES and PIAAC registered barriers in different ways: while the AES allowed for multiple answers (and examined the most important barrier separately), PIAAC registered only the most important barrier reported by the respondent. We will thus mainly draw on the (richer) data from the AES in this paragraph.

3.3.1 Number of barriers reported

First, Table 9 illustrates the differences in the average number of barriers reported by respondents from different countries.

Table 9 Average number of specific barriers reported by respondents in Group B (AES)

Country	Number of barriers	Country	Number of barriers
PT	1.31	**SE**	2.23
ES	1.48	**NO**	2.30
DK	1.56	**IT**	2.37
WL	1.61	**FR**	2.40
FL	1.75	**AT**	2.47
EL	2.12	**NL**	2.83
FI	2.18	**DE**	2.90

3.3.2 Most prevalent barriers

Table 10 and Table 11 describe the share of respondents who referred to a specific barrier in Group B resp. in the full sample. The most frequent difficulties on average are on the left; for each country, the three most frequent answers are indicated in red. In the remainder of the paragraph, we will make abstraction from Portugal which stands out with its extremely high share of respondents selecting the undefined, ambiguous category of 'other personal reasons'.

On overall, there are three major barriers inhibiting participation in lifelong learning:

- costs
- family responsibilities
- conflicts with the work schedule

Costs are reported as a barrier by 35% of the respondents interested in participation and by about 7% in the full sample. However, this obstacle appears to be less important in the Belgian regions (in Flanders, only 1% of the full sample indicated to have been withheld from participation by cost issues), in the Scandinavian countries and Spain. Eurydice (2015) (see 1.3.2) indeed found that public subsidies to LLL tend to be most generous in Belgium, Spain, Denmark and Sweden (but also in Germany and Austria).

Family responsibility is an issue for about 34% of the respondents interested in participation and 10% of the full sample. However, in the Nordic countries (and again also in Belgium and France) this barrier seems less important, which could reflect the well-developed child care provision in these countries. By contrast, in Southern countries family responsibilities represent a much larger barrier to lifelong learning participation (mentioned by 20 to 25% of all respondents in Greece, Italy, and Spain).

Finally, the *employer-related concerns* (lack of support, conflict with the work schedule) represent also a large share of reported barriers, though country differences are smaller here and no clear patterns can be distinguished.

Figure 7 summarizes the information on the three most popular barriers reported in the AES.

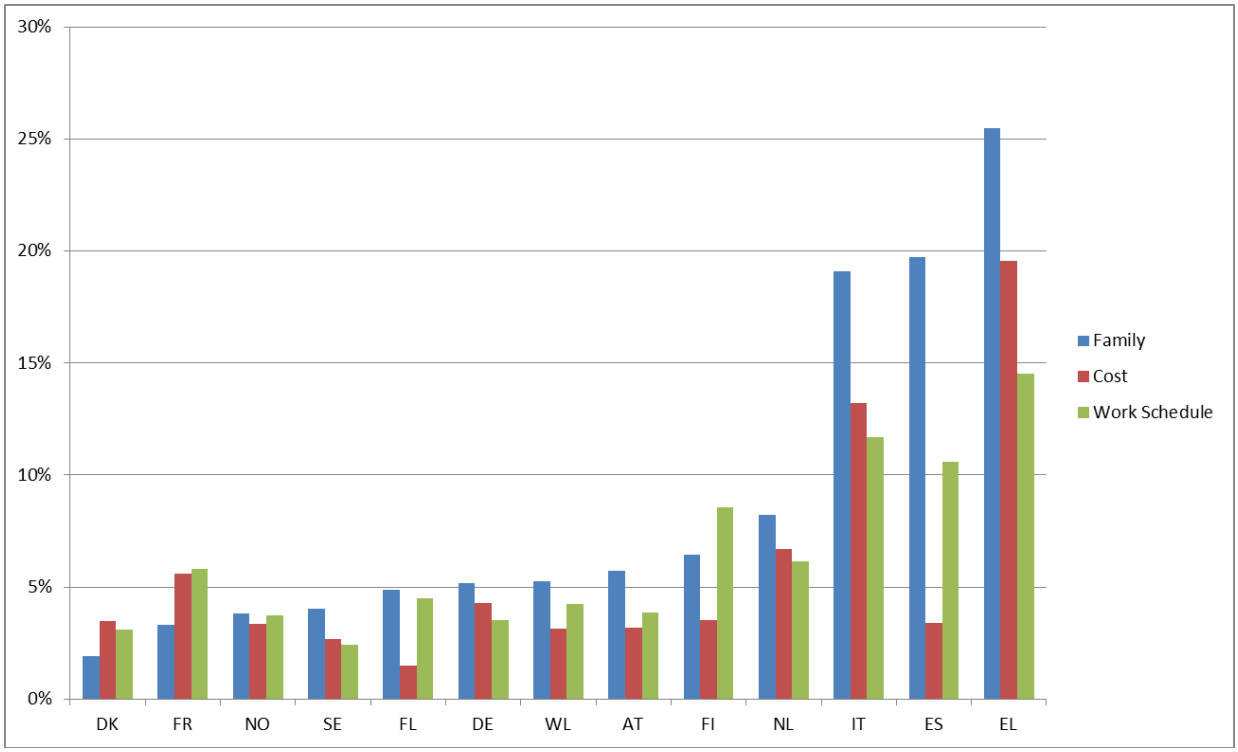


Figure 7 **Share of the sample that was withheld from lifelong learning participation because of family responsibilities, costs, or work schedule (AES; multiple answers possible)**

Table 10 Share of respondents in Group B who refer to a specific barrier (multiple answers possible) (AES)

COUNTRY	Cost (2)	Family responsibility (7)	Conflict with work schedule (4)	Lack of employers' support (3)	No suitable supply (10)	Distance (5)	Prerequisites (1)	Health or age (8)	ICT (6)	Other personal reasons (9)	None of the listed difficulties
Average	35%	34%	30%	20%	18%	15%	12%	12%	5%	17%	6%
DK	24%	13%	21%	22%	21%	3%	3%	15%	1%	8%	14%
FI	21%	24%	40%	22%	18%	25%	8%	14%	4%	16%	8%
NO	24%	27%	31%	29%	13%	17%	11%	26%	5%	14%	10%
SE	26%	28%	21%	19%	15%	17%	14%	25%	2%	32%	4%
AT	29%	45%	34%	21%	17%	27%	12%	21%	6%	15%	3%
DE	49%	43%	33%	28%	20%	9%	22%	11%	4%	32%	6%
FL	12%	29%	35%	10%	8%	10%	8%	21%	1%	9%	14%
WL	16%	19%	19%	13%	8%	9%	9%	22%	3%	14%	12%
NL	48%	40%	38%	30%	18%	20%	6%	21%	8%	23%	8%
FR	34%	17%	31%	35%	25%	16%	15%	16%	7%	10%	7%
EL	40%	43%	25%	13%	38%	16%	7%	5%	3%	13%	1%
ES	16%	29%	27%	23%	12%	5%	9%	5%	1%	12%	0%
IT	44%	48%	30%	7%	15%	20%	10%	10%	7%	17%	9%

Table 11 Share of respondents in the full sample who refer to a specific barrier (multiple answers possible) (AES)

COUNTRY	Cost (2)	Family responsibility (7)	Conflict with work schedule (4)	Lack of employers' support (3)	No suitable supply (10)	Distance (5)	Prerequisites (1)	Health or age (8)	ICT (6)	Other personal reasons (9)
Average	7%	10%	7%	3%	4%	3%	3%	4%	1%	7%
DK	3%	2%	3%	3%	3%	1%	1%	2%	0%	1%
FI	4%	6%	9%	4%	5%	5%	2%	6%	1%	4%
NO	3%	4%	4%	3%	2%	2%	2%	5%	1%	3%
SE	3%	4%	2%	2%	2%	2%	1%	5%	0%	5%
AT	3%	6%	4%	2%	2%	3%	2%	3%	1%	2%
DE	4%	5%	4%	3%	2%	1%	2%	2%	1%	4%
FL	1%	5%	5%	1%	1%	1%	1%	4%	0%	2%
WL	3%	5%	4%	2%	2%	2%	2%	6%	1%	3%
NL	7%	8%	6%	4%	3%	3%	1%	7%	2%	6%
FR	6%	3%	6%	6%	4%	3%	3%	4%	1%	3%
EL	20%	25%	15%	5%	15%	7%	7%	10%	2%	14%
ES	3%	20%	11%	4%	2%	1%	2%	5%	0%	14%
IT	13%	19%	12%	2%	7%	6%	4%	6%	2%	11%

3.4 Most important barriers for not participating according to PIAAC

Overall, our findings from PIAAC confirm the pattern discussed above. Table 12 shows that, like in the AES, the dominant barriers observed in PIAAC are costs, family responsibilities, and conflicts with the work schedule. Moreover, Figure 7 shows that the cross-country patterns are very similar too.

As in the AES, very few respondents from the Nordic countries (as well as France, but unlike Flanders) refer to family responsibilities as an obstacle to lifelong learning. By contrast, having to deal with family responsibilities still is a key problem hindering lifelong learning in the Southern countries (and also in Ireland).

The cost issue also seems to be particularly small in the Nordics and, again, Flanders.

Table 12 Share of the full sample that reported a certain barrier as the most important barrier inhibiting participation in lifelong learning (PIAAC)

	Cost	Family responsibilities	Work schedule	Lack of employer's support	Inconvenient time or place	Prerequisites	Something unexpected	Other
Average	**0.93**	**1.35**	**1.39**	**0.41**	**0.58**	**0.21**	**0.39**	**1.65**
AT	0.49	1.21	1.78	0.11	0.68	0.14	0.63	1.33
DE	0.77	1.57	1.40	0.57	0.40	0.15	0.23	1.50
DK	1.22	0.55	1.34	0.73	0.52	0.19	0.46	2.08
ES	0.75	3.18	2.86	0.21	0.76	0.35	0.25	2.10
FI	0.45	0.73	0.85	0.3	1.02	0.16	0.19	1.93
FL	0.20	1.57	0.95	0.14	0.63	0.15	0.29	0.87
FR	1.60	0.75	1.48	1.27	0.24	0.31	0.20	2.32
IE	1.75	2.64	1.30	0.24	1.11	0.42	0.73	2.56
IT	1.06	1.95	2.16	0.14	0.32	0.38	0.42	0.97
NL	0.83	0.76	0.69	0.46	0.30	0.06	0.33	1.23
NO	0.66	0.61	1.17	0.48	0.42	0.17	0.62	1.21
SE	0.99	0.86	0.98	0.55	0.61	0.26	0.37	1.82
UK	1.36	1.13	1.08	0.19	0.48	0.05	0.38	1.48

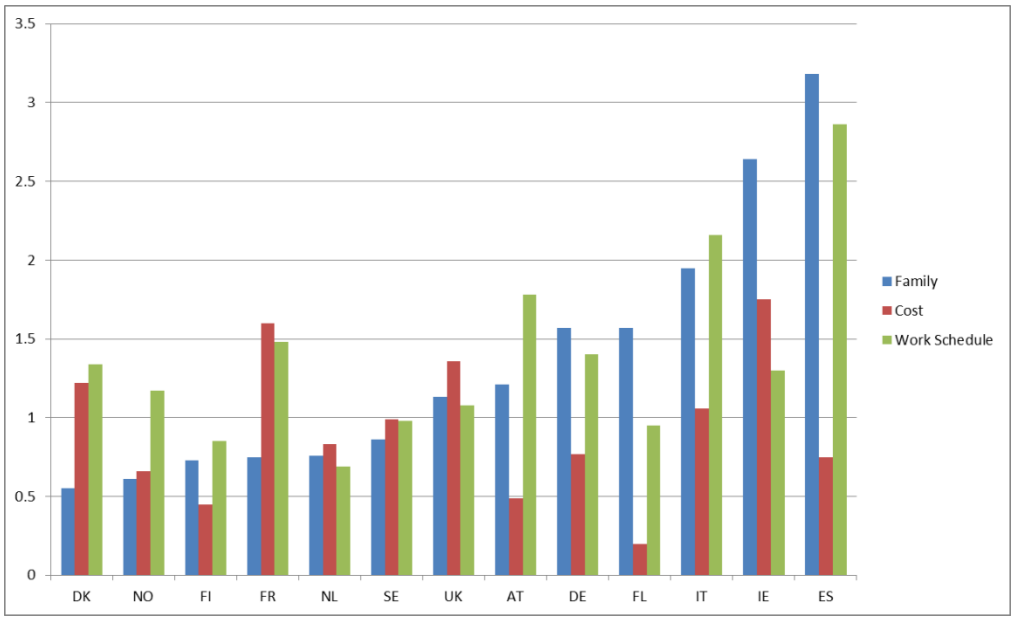


Table 13 **Share of the sample that was withheld from lifelong learning because of family responsibilities, costs, or work schedule (PIAAC; only most important barrier)**

3.5 Differences between social groups in the barriers preventing lifelong learning participation

Above, we examined the overall share of the population withheld from lifelong learning by specific barriers. In this section, we will further break down the sample to consider the extent to which disadvantaged subgroups report specific barriers more often than their advantaged counterparts. We present the results from the AES and PIAAC together. Remember that the AES allowed to indicate multiple reasons, which together with the different survey procedure (cf. §0) explains why proportions are on average higher in the AES than in PIAAC.

3.5.1 Family responsibilities

First, we note that females are far more likely to encounter family responsibility as a barrier to lifelong learning (Figure 8). In the Nordic countries and France, relatively few females consider family responsibilities as a barrier. By contrast, in the Southern countries, 25% to 30% of all females refer to family responsibilities as a hindrance towards participation (AES). This finding is consistent in AES and PIAAC.

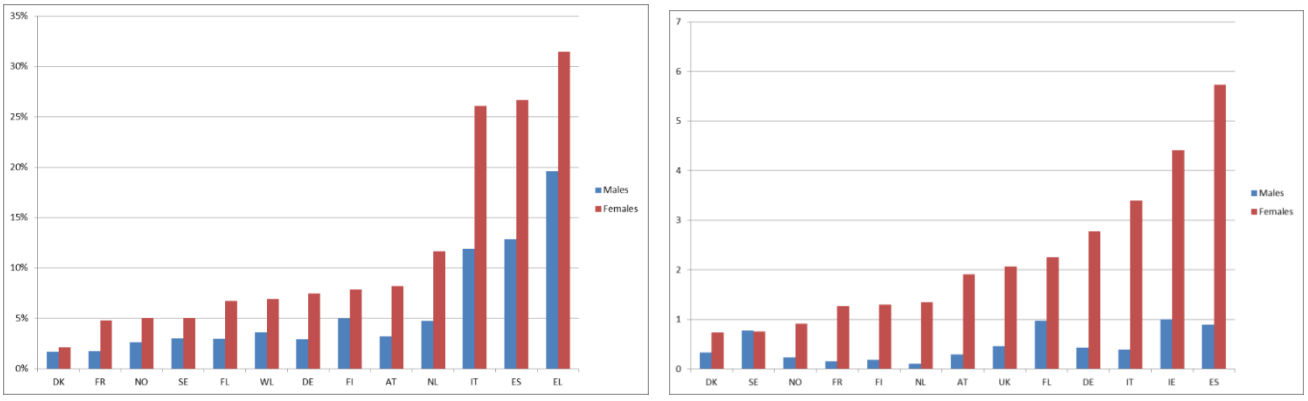


Figure 8 **Family responsibility as a barrier to lifelong learning, by gender (left: AES; right: PIAAC)**

Secondly, low-educated respondents also seem more likely to mention family responsibilities as a barrier to lifelong learning. Figure 9 shows that the odds of family responsibilities inhibiting participation are about two times as large for respondents with no more than a primary qualification compared to respondents with a tertiary qualification (on the left X-axis, the percentage of the full sample reporting the barrier is presented; the right Y-axis contains the odds ratio between a low and a high qualified respondent).

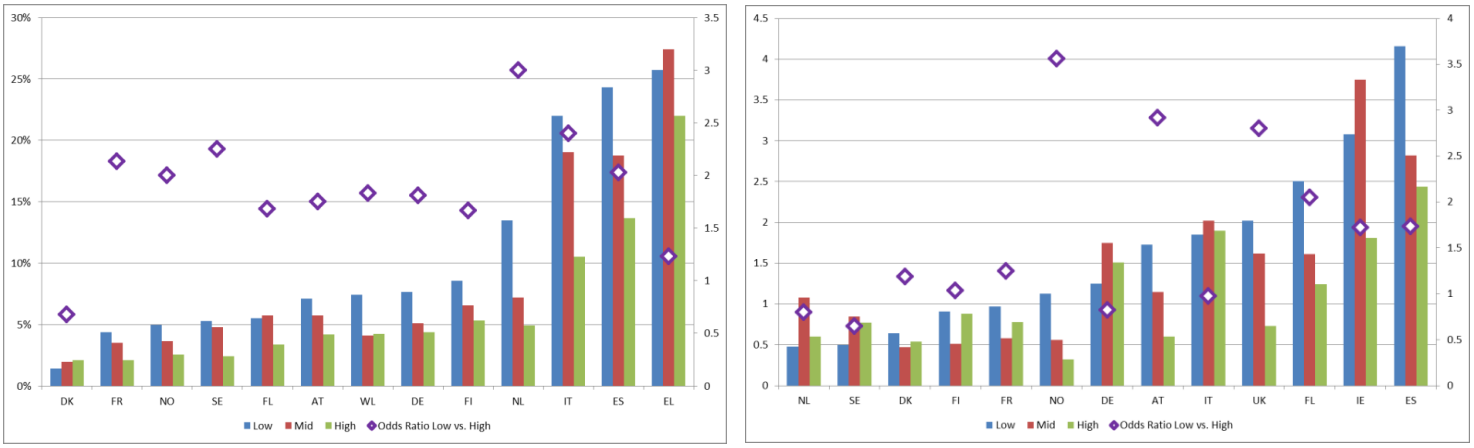


Figure 9 **Family responsibility as a barrier to lifelong learning, by level of education (low = ISCED 0-2, middle = ISCED 3-4, high = ISCED 5-6) (left: AES; right: PIAAC)**

3.5.2 Costs

Similarly, Figure 10 and Figure 11 show that the importance of costs as a barrier to lifelong learning participation is far greater among disadvantaged groups (defined in terms of educational level resp. income): the odds ratios are always markedly larger than one (again, the left X-axes represent the percentage reporting the barrier; the right Y-axis contains the odds ratio between low and high qualified respondents resp. low / high income). However, note that even with a high odds ratio the absolute importance of cost issues might be low; for example, in Flanders less than 3% of the AES-respondents at the lower end of the income distribution (percentile 0 - percentile 30) mentioned costs as a barrier. By contrast, over 20% of all Greek or Italian AES-respondents in the low end of the income distribution report that costs prevented them from participating in lifelong learning. Note that, in all instances, Flanders stands out with the lowest share of disadvantaged respondents reporting cost-related obstacles..

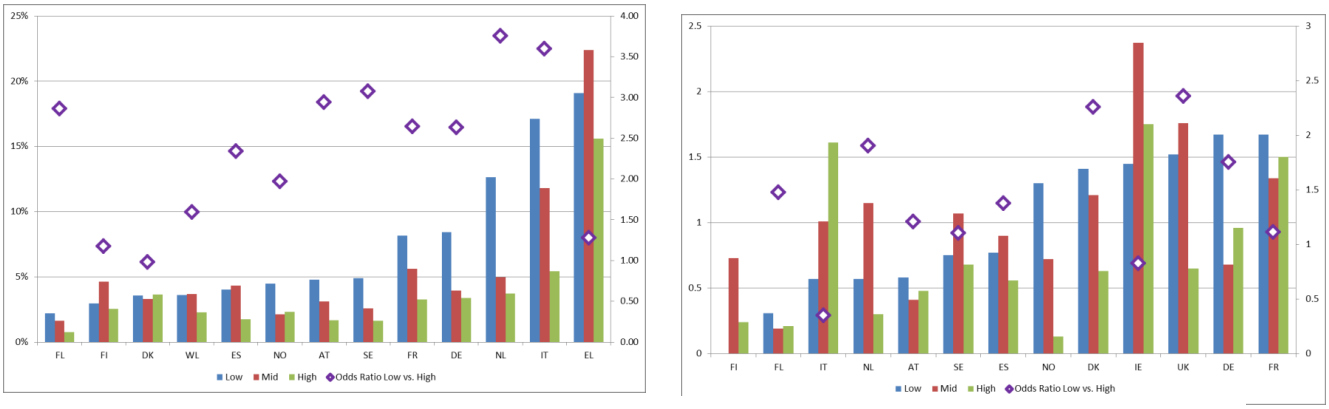


Figure 10 **Costs as a barrier to lifelong learning, by level of education (low = ISCED 0-2, middle = ISCED 3-4, high = ISCED 5-6) (left: AES; right: PIAAC)**

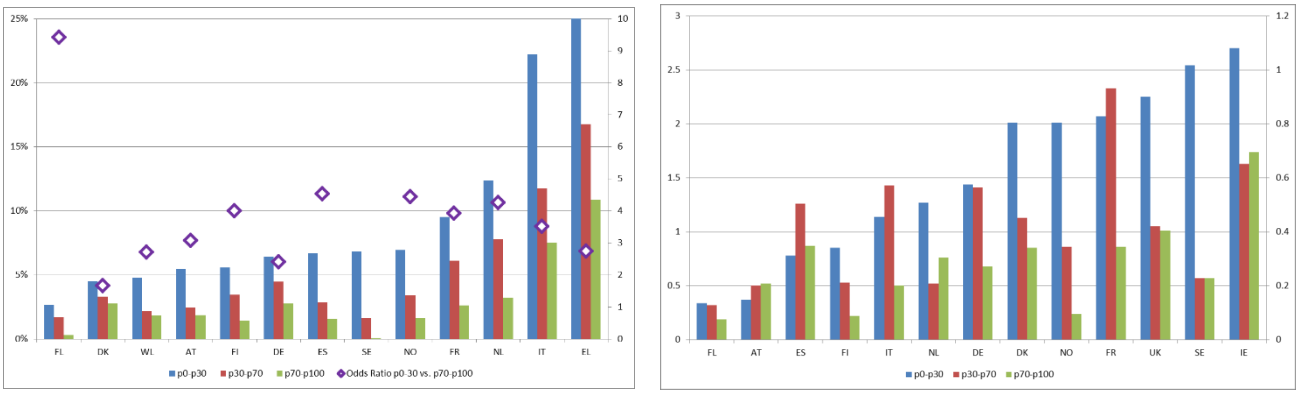


Figure 11: Costs as a barrier to lifelong learning, by income percentile (left: AES; right: PIAAC)

3.5.3 Work schedule

Finally, Figure 12 illustrates that work schedule is as much a barrier to participation among high educated as among low educated respondents: the odds ratios are close to one in most countries.

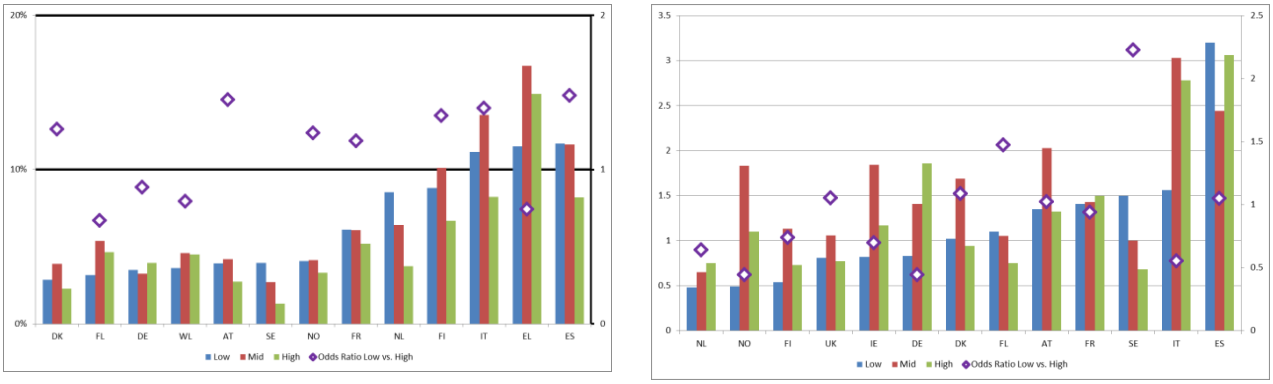


Figure 12 Work schedule as a barrier to lifelong learning, by level of education (left: AES; right: PIAAC)

Hence, we investigated whether other characteristics of the job (which are available in the AES) could explain differences in naming work schedules as a barrier to participation. For instance, are people working part-time less able to devote part of their work time to training? However, Figure 12 shows that there is no clear difference between contract types in the share that reported work schedules as a barrier to participation.

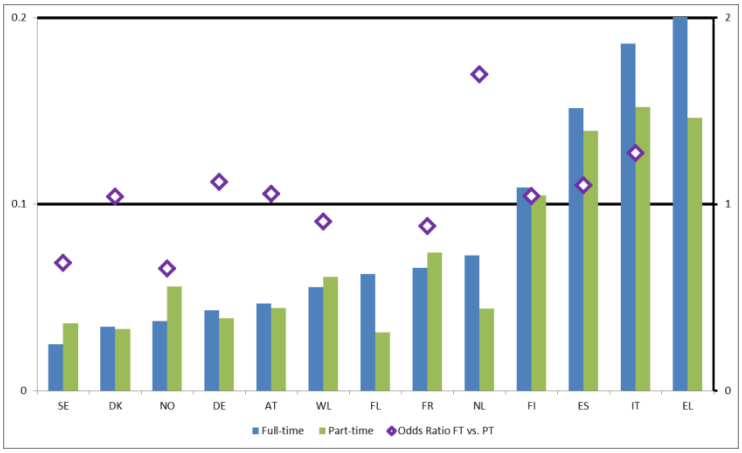


Figure 13 Work schedule as a barrier to lifelong learning, by contract type (AES)

By contrast, the number of persons working at the local unit where the respondent is employed (<20, 20-250, >250) does seem to have a clear influence on the ability of respondents to reconcile work schedules with training participation: respondents in small companies reported this difficulty more often than respondents from large firms. This is in line with earlier evidence from the literature, which suggested that big firms are in a better position to conduct a training policy that resolves the time constraints of their employees, e.g. because they can redistribute tasks of employees on training among colleagues (Georgellis and Lange (2007), Kotey and Folker (2007), Sels, Bollens, and Buyens (2000)).

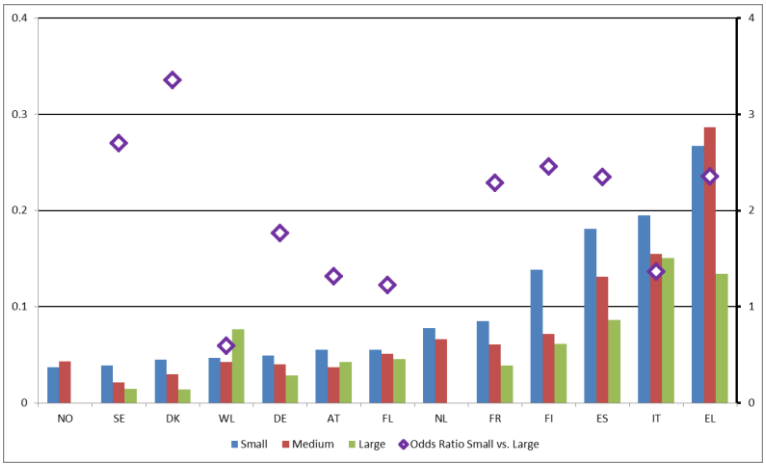


Figure 14 Work schedule as a barrier to lifelong learning, by firm size (small: <20, medium: 20-250, large: > 250) (AES)

3.6 Preliminary conclusion

In Lavrijsen and Nicaise (2015b), we already noted that in particular the Nordic countries recorded high participation rates among disadvantaged groups. Overall, the analysis of the barriers discussed in this section suggests that this achievement is due to an integrated policy to reduce all important barriers that may hinder participation in lifelong learning: these countries combine affordable child care, public funding, and effective training arrangements at the job. This underlines the importance of broader social welfare policies in supporting a successful lifelong learning system.

However, the questionable quality of our data sources leaves many questions unanswered. From a methodological point of view, the survey procedure prescribed in the AES seems more attractive than that in PIAAC: whereas in PIAAC everyone 'not wanting' to participate is treated as not being interested in lifelong learning, AES applied a double filter by which those respondents were asked yet again what specific difficulties hindered them – and indeed, a sizeable proportion of these respondents reported specific difficulties on a second thought. However, the data quality of the AES appears to be rather poor on this issue, with severe deviations from the proposed procedure in a number of countries. This of course limits the validity of any further analysis.

Despite these caveats, however, most non-participants in lifelong learning seem to have reported *none* of the suggested barriers to explain their non-participation; instead, 'not willing' to participate seems to be a far more prevalent obstacle than any exogenous barrier, particularly for low qualified respondents. Hence, another explanation of the high participation rates in the Nordics might be that they have been successful in reducing the number of respondents that does not want to participate in lifelong learning.

From a Flemish perspective, the opposite tendency seems to apply: while the survey data suggest that in Flanders important barriers such as costs, work schedules and family responsibilities have been relatively successfully overcome (cf. also Djait and Boey (2014), participation figures remain fairly low. This seems to be related to a relatively high proportion of respondents not wishing to participate in lifelong learning (47% of the full sample, and 74% of the low qualified respondents).

This leaves us with a rather incomplete and unsatisfactory image of the barriers impeding participation to lifelong learning, let alone, of the possible psychological dispositions (and underlying institutional arrangements) that may affect this willingness to participate. Hence, the next Chapter will explore this 'willingness to learn' in greater detail.

Chapter 4 Attitudes towards learning

The main purpose of this report was to examine, on the basis of the AES and PIAAC, the barriers that explain non-participation in lifelong learning. However, the previous Chapter showed that a relatively large proportion of the respondents do not report any barrier; instead, they report not to be willing to participate.

The present Chapter attempts to understand these country differences in the observed willingness to participate in lifelong learning, using measurements of learning attitudes carried out as part of various educational surveys.

4.1 Learning attitudes and educational system design

4.1.1 Learning attitudes

As we argued in the first Chapter, any decision to participate in lifelong learning presupposes a positive attitude towards learning, a willingness to learn. In the literature, the mental background against which learning processes take place and which influence the capacity of the individual to successfully perform these processes has been labelled with terms such as 'learning attitudes', 'learning dispositions', 'learning intentions', or simply as a 'readiness to learn'. Several researchers have tried to identify a number of key ingredients of these attitudes:

- Goleman (1996) has listed seven elements which he proposes to constitute someone's learning capacity: confidence, curiosity, intentionality, self-control, relatedness, communication and cooperation.
- Carr and Claxton (2002), and later on Crick and Yu (2008), developed a concept of 'learnacy', defined as 'knowing how to learn' (in analogy to literacy or numeracy). They distinguished eight elements that define this concept: curiosity, mindfulness, selectivity, resilience, experimentation, reflection, opportunism, and conviviality.
- Guthrie, Schafer, Von Secker, and Alban (2000), drawing on previous models by McKenna (1994), distinguished five aspects of motivation to learn: a dedication to understand, enjoyment, extrinsic motivation (the promise of rewards), self-efficacy (confidence), and social motivation.

Attitudes towards learning have been a central ingredient of the so-called "21st century skills" (Allen & Velden (2012)) that receive growing attention in educational policy today. As the OECD (2012) recently put it: "*The need for deep and wide knowledge means that education systems will have to give students a forma mentis, or mindset, that is open to absorbing and filtering new information and is able to combine that information with acquired knowledge in innovative ways. More than ever, education systems need to help students learn how to learn: only if students have the capacity, motivation and enthusiasm to be lifelong learners will they be able to remain active and productive citizens throughout their lives.*" In a similar vein, Levin (2012) and Claxton (2009) have stressed that the efficiency of an

educational system should not be evaluated in terms of cognitive proficiency development alone, but that it should include different aspects of human potential as well, in particular socio-emotional and psychological dispositions. As Carr and Claxton (2002) argue, "*the fundamental purpose of education for the 21st century is not so much the transmission of particular bodies of knowledge, skill and understanding as facilitating the development of the capacity and the confidence to engage in lifelong learning. Central to this enterprise is the development of positive learning dispositions. (…) It is an increasingly vain hope that education can provide young people with the knowledge, skills and understanding they will need to function well in adult life. Instead, the focus of education is shifting to a concern with the development of aptitudes and attitudes that will equip young people to function well under conditions of complexity, uncertainty and individual responsibility: to help them become, in other words, good real-life learners.*"

4.1.2 Educational system design

As suggested already in the first Chapter, research has suggested that attitudes towards learning are primarily shaped during the initial school experience (cf. Gorard (2009)). Hence, the crucial question becomes: *which educational policies in particular can ameliorate attitudes to learning among youngsters - and in the longer end, increase lifelong learning participation*?

Micro- or meso-level research has already identified a number of specific instructional practices and school-level programmes that may lead to more positive attitudes and engagement towards schooling, as for example demonstrated by Guthrie, Schafer, Von Secker, and Alban (2000), Barnett and Irwin (1994), Brozo, Shiel, and Topping (2007) and Dungworth, Grimshaw, Mcknight, and Morris (2004). However, in this research line, we are more interested in the *systemic features* of the educational system. As we saw earlier (Lavrijsen, Nicaise, and Poesen-Vandeputte (2014)), educational systems differ drastically in the way they treat different types of students with different abilities, preparing them for different endpoints. As proposed by Dupriez, Dumay, and Vause (2008), which we already discussed into some detail in Lavrijsen and Nicaise (2013), educational systems can be divided into four broad types, depending on how they respond to student heterogeneity: early tracking, grade retention, ability grouping, and individualized integration.

The design of the educational system can be expected to influence attitudes towards learning because it affects the experiences of students during their school career. For example, imagine a student at risk of underperformance. Depending on the design of the educational system, this student will be either placed in a lower track (in an early tracking system), withheld a grade (in a grade retention system), assigned to a less ambitious ability group (in a ability grouping system), or targeted by intensive remediation (in an individualised integration system) (Dupriez, Dumay, and Vause (2008)). This can affect his experience at school in multiple ways. For example, the *mere fact of being treated differently* (e.g. being placed in a lower track, or having to repeat a grade) may influence attitudes towards being in school. Similarly, the differential treatment might affect the learning goals and perspectives of students; for example, being placed early on in a lower track may influence ones perception of what education is about. Importantly, the mechanisms also determine *the kind of peers* with whom the student will be in class; we know from the literature that the self-image of a learner depends strongly on the comparisons that can be made with class- and schoolmates (see below).

We will now summarize some findings from the literature of the effect of the three external differentiation mechanisms (tracking, grade retention, ability grouping) on attitudes towards learning.

4.1.2.1 Tracking

We consider the evidence on the effects of early tracking on two specific psychological outcomes of schooling: first, academic self-concept, and secondly, the learning perspective as embodied in the school culture. While both outcomes are not completely identical to the broader concept of learning attitudes, it can be argued that both are strongly related to the development of these attitudes.

a) Academic self-concept: Big-Fish-Little-Pond

The 'academic self-concept' of a student refers to how students perceive their own proficiency. Overall, the 'Big-Fish-Little-Pond' effect (or 'contrast' effect) postulates that one's academic self-concept does not only depend on his genuine ability, but also on how this ability compares to that of his peers in class and at school. In particular, a student in a high (and thus, on average, more demanding) track is on average less confident about his own ability than an equally talented student that was placed in a lower, less demanding track (see Marsh and Hau (2003); Thijs, Verkuyten, and Helmond (2010); Marsh and Parker (1984); Catsambis, Mulkey, and Crain (2001); for recent examples from Flanders, see Wouters, Colpin, Germeijs, and Verschueren (2009) and Wouters, De Fraine, Colpin, Van Damme, and Verschueren (2012)).

According to this argument, the self-concept of a low achieving student should *benefit* from early tracking, as being in a low-performing group reduces the exposure to peers that are performing markedly better than the student. By contrast, in a heterogeneous group, low achievers will continuously make comparisons of their own performance with that of more able peers, and this may lead to a reduced self-concept.

Note that also a reverse 'assimilation' effect has been put forward: being a member of a group of low-achieving students may also make a student feel more negatively about his own ability, as the average low ability of his class will reflect on his perception of his own ability (the other way round, students in high tracks may bask in the 'reflected glory' of the peer group; this effect has thus been called the 'reflected glory' effect). However, the size of the assimilation effect has usually been found to be much smaller than the size of the contrast effect. In sum, we thus expect that the overall net result of tracking on academic self-concept should be positive.

b) School culture and learning climate

A second element that may affect the development of attitudes towards learning is the school or class climate in which pupils mature: the attitude towards the learning process that is dominant in the class or school of the student may strongly influence one's own attitude. The literature has put forward a number of indications that the process of early tracking leads to less advantageous learning cultures in lower tracks. First, in many countries, 'lower' tracks are often regarded as a second choice for those who do not meet the standards set for the 'higher' track (Ainsworth and Roscigno (2005)). This may result in feelings of failure and frustration, demotivating students who do not feel they are being given equal opportunities to success (Miller (1980)). Secondly, lower track students may evaluate schooling as less relevant because it seems less beneficial for their future. For example, Malmberg and Trempala

(1997) observed that students in lower tracks see their school involvement as having little future payoff; similarly, Friedkin and Thomas (1997) found that students in lower tracks are more fatalistic than students in general tracks, while Catsambis, Mulkey, and Crain (1999) confirmed that students in lower tracks have weaker internal loci of control. Relatedly, the study culture in lower tracks is often less oriented towards learning because students feel more 'futile' about learning (they perceive that they have little control over success or failure, cf. Brookover, Schweitzer, Schneider, Beady, Flood, and Wisenbaker (1978); for a Flemish example, see Van Houtte and Stevens (2010)).

In heavily differentiated systems, in which tracks are isolated from each other (often in different schools), futility feelings in the lower tracks might accumulate into an anti-school culture. This claimis known as the differentiation / polarization hypothesis (dating back to the work of Hargreaves (1967) and Lacey (1971)): external differentiation creates a polarization of subcultures between a dominantly pro-school culture in the advantaged tracks/schools and an anti-school culture in the disadvantaged ones. This hypothesis has indeed been confirmed by a number of studies (Abraham (1989); Berends (1995); Ball (1981)). School cultures indeed have been demonstrated to influence individual attitudes towards learning; for example, Van Houtte and Stevens (2009) have observed how such cultures lead to strong associations between track type and study involvement in Flanders.

4.1.2.2 Grade retention

For grade retention as well, the expected effects may go both ways. First note that, in contrast to the previous section, we do not expect a strong effect of the use of grade retention in a specific country on the attitudes of the *high* achievers in that country. High achievers are of evidently not likely to experience grade retention themselves, and the change in the reference group as a consequence of the practice is expected to be rather small. Hence, the effects of grade retention will be only relevant for those at the low end of the educational spectrum.

On one hand, at least during the first year after retention, grade repeaters start with an advantage in academic knowledge and skills over their new classmates. This may lead them to experience some successes and increase their academic self-concept and motivation (similar to the Big Fish Little Pond-effect).

However, this advantage may vanish after some time. Moreover, grade repeaters usually have to repeat all subjects, including those that did not pose any problem, which may lead to feelings of dullness. Grade repeaters may also experience a higher risk of being socially excluded from their classmates. Finally, the mere experience of repeating a grade may have an impact on attitudes toward school. For example, retained pupils often report that they perceive their retention as a punishment and that it sometimes invokes a stigma (Byrnes (1989); Roderick (1994). This could influence their attitudes towards school negatively as well.

A large number of empirical studies has tried to pin down the net effect of grade retention on attitudes towards school. As these studies have been explored in depth in a recent OBPWO-study (Juchtmans, Goos, Vandenbroucke & De Fraine (2012)), we will restrict ourselves here to a short discussion of two meta-analyses, which aggregated results from a number of individual studies to identify general patterns among the results:

- A meta-analysis by Holmes and Matthews (1984) included 44 studies published between 1929 and 1981. While most of these studies concerned the effect of grade retention on academic achievement, 8 studies also measured attitudes toward school. Overall, the retained students had less favourable attitudes towards school than promoted students. However, the standardised effect size (the difference between the mean of the retained group and the mean of the comparison group, divided by the standard deviation of the comparison group) for composite socio-economic adjustment was not overwhelmingly strong (-0.16).

- This meta-analysis was updated with more recent studies by Jimerson (2001), who reviewed 20 studies published between 1990 and 1999. 16 of these studies addressed socio-emotional outcomes, yielding 148 analyses. Of these analyses, (only) 9% favoured the comparison group of non-promoted and 5% favoured the retained students; however, the majority (86%) indicated no significant differences between the two groups. The mean effect size was -0.22.

The meta-analyses cited above thus do not yet provide clear evidence on the effect of grade retention on psychological outcomes. Further note that two recent individual studies may further add to this ambiguous image of grade retention: Hong and Yu (2008) found that retained children benefit from retention with respect to behavioural engagement and school belongingness (although the latter benefit decreased in the longer term), while Wu, West, and Hughes (2010) found that retained pupils develop a higher level of self-confidence and interest in reading than a promoted comparison group.

In particular for the Flemish context a recent study by Goos, Van Damme, Onghena, Petry, and de Bilde (2013) did find that retained pupils in primary school did have a less positive psychosocial functioning. On the other hand, Lamote, Speybroeck, Van Den Noortgate, and Van Damme (2013) found that grade retention in Grade 8 had a negative effect on the achievement of retained students, but no effect on academic self-concept.

Two major explanations have been put forward to clarify the observed ambiguity between studies. First, the quality of the research design has been found to moderate the measured effects of grade retention (Allen, Chen, Willson, and Hughes (2009)). The main issue here is that grade retention cannot be considered an exogenous variable: characteristics that are associated with grade retention also predict later poor school outcomes, such as disengagement with school or negative attitudes towards schooling. Indeed, there seems to be a circular relationship between attitudes to learning, classroom behaviour, proficiency and dropout or retention risks (see e.g. Fredricks, Blumenfeld, and Paris (2004); Nurmi, Aunola, Salmela-Aro, and Lindroos (2003); Baumert, Nagy, and Lehmann (2012); Stanovich (1986)). Methodologically, most studies published during the past decade have responded to this issue by matching the comparison group of promoted students and that of retained students (usually by comparing IQ, academic achievement, SES, and gender). Allen, Chen, Willson, and Hughes (2009) concluded that, in general, the better the design, the less pronounced were the effects of grade retention.

Secondly, and more fundamentally, one could argue that a focus on 'grade retention' does not cover what is most relevant for the future achievement and the socio-emotional outcomes of pupils: if a pupil does develop in a satisfactory way, how do we remedy this disadvantage? Obviously, neither retention, when understood as simply repeating a grade, nor promotion, when understood as accessing the next year without special arrangements for improvement, provide attractive solutions *in*

themselves. What matters more is the amount and the quality of the remedial strategies offered to underachieving children (Alexander, Entwisle & Dauber (2003)): early identification and intervention, and the continuous monitoring of the academic and socio-emotional progress of the students. Hence, even when grade retention is a problem, the available alternative does not necessarily lead to more attractive outcomes.

4.1.2.3 Ability grouping

A third educational stratification mechanism consists of offering courses on different levels for each subject, depending on the students' ability for each subject. This option is particularly popular in Anglo-Saxon countries. The difference with "tracking" as described above, is that 1) selection into ability groups is more flexible compared to rigid tracking, because it can be both temporary (e.g. upgrading to higher group when appropriate) and because it depends on each specific subject and 2) schools usually offer the full range of ability groupings, instead of different schools catering only for pupils from one type of track (cf. Hauptschüle, Realschüle, Gymnasium).

The expected effects of ability grouping may thus deviate from the effects of tracking: on one hand, ability grouping may be less harmful for (weak) students' attitudes towards learning because its flexible nature reduces the 'stigma' of being attributed to a lower group (students may be in a higher group for other subjects). Accordingly, the flexible nature of the ability groups, and the fact that students are in more diverse schools, again influences the reference group with which students compare themselves. For example, Chmielewski, Dumont, and Trautwein (2013) have observed that the contrast and assimilation effects of tracking depended on the school organisation.

4.1.2.4 Indications from a comparative perspective

The possible effects of the three external differentiation mechanisms on the attitudes towards school[9] depends on the profile of the student are summarized in Table 14.

Table 14: Possible effects of external differentiation mechanisms on attitudes towards school

	Weak students	Strong students
Tracking	Negative: stigma, anti-school-culture (DP)	Positive: pro-school-culture (DP)
	Positive: weaker reference group (BFLP)	Negative: stronger reference group (BFLP)
Grade retention	Negative: stigma, negative experience	Not applicable
	Positive: stronger in comparison to reference group (at least initially) (BFLP)	Not applicable
Ability grouping	Comparable to tracking, but weaker	Comparable to tracking, but weaker

For all mechanisms, we could in principle expect both positive and negative effects. The existing research discussed above has mainly drawn on student-level data from single countries. In this report, we will follow a system-oriented approach, in which we compare the (average) outcomes across different countries and try to relate them to the tracking regime and the average use of grade retention and ability grouping in each country. An advantage of using country averages is that it is less sensitive

[9] We focus here on the primary influences on the mechanisms on the personal experiences of pupils. Additional, more specific elements such the content of what is taught in the different tracks could influence attitudes towards learning (e.g. the abstractness of the content).

to the selectivity bias discussed above: the system applies to *all* students, and the sample consists of a representative sample from the full population. A disadvantage is that (1) usually no longitudinal data are available and (2) there may be other macro-variables that explain differences between countries as well, and a failure to control them may result in biased estimates.

A notable example of a comparative examination of the effect of the mechanisms on socio-emotional outcomes is the paper by Dupriez, Dumay, and Vause (2008) cited above. Using PISA-data, Dupriez and colleagues showed that early tracking negatively affected the general skill level of disadvantaged students, but that it also led to higher levels of academic self-concept among those students. By contrast, the comprehensive Scandinavian systems that scored best in terms of skill levels among weak students also led to the largest gaps in academic self-concept between weak and strong students. Hence, Dupriez, Dumay, and Vause (2008) concluded that "*education systems that place underachieving children in better studying conditions (i.e. in heterogeneous schools and favourable disciplinary climates) are also those with the greatest discrepancy between low achievers and other students in terms of self-concept. (…) This finding raises the question of the "psychological" cost of mixed-ability grouping and calls for further investigation*."

By contrast, a recent analysis of data from PISA on study engagement in relation to tracking observed that "*there is a strong negative association between the levels of students' motivation and the degree to which school systems sort and group students into different schools and/or programmes. In those systems that tend to separate students into different schools or programmes, students generally reported less instrumental motivation to learn mathematics than students in systems that tend not to separate students in that way*" (Borgonovi (2014)).

In the next section, we will further investigate how the design of the educational system influences the attitudes to learning *as an adult*? To examine this issue quantatively, we make use of the PIAAC-data, which contain a number of questions addressing this issue.

4.2 Data

4.2.1 Readiness to learn

In PIAAC, respondents are asked to express their opinion on six statements concerning their attitude towards learning (Table 15). Possible answers were 1) Not at all, 2) Very little, 3) To some extent, 4) To a high extent, 5) To a very high extent. The answers to these six questions were aggregated into one "readiness to learn"-index, with higher values corresponding to a higher readiness to learn. In this section, we will in particular make use of this aggregated readiness to learn index, which gives the most complete overview of attitudes to learning.

Table 15 Variables on learning attitudes in PIAAC

Variable	Question
I_Q04b	When I hear or read about new ideas, I try to relate them to real life situations to which they might apply.
I_Q04d	I like learning new things.
I_Q04h	When I come across something new, I try to relate it to what I already know
I_Q04j	I like to get to the bottom of difficult things
I_Q04l	I like to figure out how different ideas fit together
I_Q04m	If I don't understand something, I look for additional information to make it clearer

4.2.2 Learning enjoyment and aversion

Complementary to the aggregated readiness to learn index, we will consider the answers to statement "*I_Q04d - I like learning new things*". In particular, we will use this statement to distinguish respondents who explicitly reported not liking to learn, i.e. respondents who reported 'not at all' or 'very little' on this statement. This additional focus on the 'enjoyment' found in (or better: 'aversion against') learning as a particular aspect of readiness to learn is due to a number of reasons. First, enjoyment seems the most straightforward component of a positive learning attitude as a whole, as argued for example by example, Sainsbury and Schagen (2004). Such a straightforward, simple and positively formulated statement may lead to a more accurate measurements of learning attitudes than more complex statements. This will be of particular importance when we want to compare this information with similar self-reported statements by younger students (10 year olds), as we will do in Chapter 5; indeed, research (Twist, Gnaldi, Schagen, and Morrison (2004)) has observed that in primary school surveys such statements have the lowest risk of misreporting. Secondly, readiness to learn is constructed and treated as a quasi-continuous variable, but this assumes that the intervals of the Likert-scales are equidistant, which may not be the case in reality. For example, is the difference in learning enjoyment between someone answering 'to a high extent' (value 4) and someone reporting 'to a very high extent' (value 5) similar to the difference between someone answering 'to some extent' (value 3) and someone reporting 'to a high extent' (value 4)? Moreover, it could be argued from a policy point of view that the first challenge lies in reducing the number of respondents who report an explicit aversion towards learning (i.e. those reporting 'not at all' or 'very little'), rather than in further increasing the enjoyment found in learning among persons who are already at the top of the learning enjoyment distribution. For example, it seems plausible that an aversion to learning indeed may inhibit participation in lifelong learning, while the participation of persons who like to learn 'to a high extent' would benefit from the reduction of other barriers (costs, family responsibilities, and so on) rather than further improvement in their readiness to learn.

4.2.3 Educational system characteristics

We will continue focusing on the three systemic features of the educational system expected to influence readiness to learn discussed in the previous paragraph.

First, we consider indicators relating to *tracking*. As an alternative to the age of first tracking in each country, Bol and Van de Werfhorst (2013) developed the Index of Tracking by to deal in a more uniform way with the numerous variations in tracking measures used in different studies. This index incorporates (through factor analysis) three elements of tracking: the age of first selection, the length of the differentiated curriculum, expressed as the percentage of the total curriculum in primary and secondary educational programmes that takes place in differentiated form, and the number of distinct school types that are available for 15-year old students. As argued by Bol and Van de Werfhorst (2013), "*together these three variables give a comprehensive view on external differentiation and pay attention to all theoretical aspects of the dimension."* The higher the original index, the more differentiated the system is; hence, to improve coherence with our other measure (tracking age, which is of course higher in undifferentiated systems), we here use the inverse of the original Index.

Secondly, we add information on the frequency of *grade repetition* in each country, taken from PISA 2009. The variable used for this purpose is the percentage of students that have already repeated a grade (either in primary or secondary school) at age 15.

Thirdly, we take from PISA 2009 the share of students attending schools which apply some kind of *ability grouping*. Note that this variable may be a rather inaccurate indication of the use of ability grouping due to a number of reasons. For example, students in unilateral (tracked) schools will not be counted as being in a school with 'ability grouping' - the grouping took place already before school entry – while others in a multilateral school (with different tracks) will be counted, even when they have similar classroom environments. Moreover, the figures do not tell anything about the *purposes* of the ability grouping; for example, temporary separation of low achievers from the class in order to remedy their deficits (followed by return to the normal class afterwards; convergent differentiation), such as the Special Needs Education classes in Scandinavian countries, is incorrectly equalled to long-term ability grouping in the Anglo-Saxon system, where it leads to divergent differentiation. Hence, we will not use the variable on ability grouping as such, but in combination with other characteristics to distinguish between the four types of education systems proposed by Dupriez, Dumay, and Vause (2008) (see last column).

Table 16 Educational system characteristics

Country	Tracking age	Tracking index (inverted)	Grade repetition at age 15 (%)	Ability grouping (% of schools)	System type (Dupriez et al., 2008)
FL	12	-1.04	24.9	45.7	Early tracking
NL	12	-0.97	26.7	80.2	Early tracking
DE	10	-1.79	21.4	50.6	Early tracking
AT	10	-1.75	12.6	46.4	Early tracking
FR	15	+0.48	36.9	N/A	Grade retention
IT	14	+0.18	16.0	55.6	Grade retention
ES	16	+0.80	35.3	60.4	Grade retention
IE	15	+0.13	12.0	96.4	Ab. grouping
UK	16	+1.08	2.2	99.1	Ab. grouping
NO	16	+1.08	0.0	73.4	Ind. integration
SE	16	+1.06	4.6	74.2	Ind. integration
DK	16	+0.93	4.4	49.6	Ind. integration
FI	16	+0.93	2.8	57.5	Ind. Integration

4.3 The importance of learning attitudes for lifelong learning

To what extent can measured learning attitudes help us to understand participation in lifelong learning? To this end, we start with a model that predicts (individual) lifelong participation on the basis of a set of individual characteristics - age, sex, and educational level[10], and a country fixed effect. We then add the readiness–to-learn index as an extra predictor. To compare the contribution of each variable to participation probability, all coefficients are standardized. The results are reported in Table 16.

Table 17 shows that educational level has a positive influence on participation probability, while being a female or being older has a negative effect. However, comparing Model 2 to 1 shows that adding readiness to learn to the model somewhat reduces the effect of educational level (by about 10%); hence, part of the effect of educational level on participation is mediated by a higher readiness to learn among better-educated respondents. Model 2 also confirms the significant effect of readiness to learn on lifelong learning participation (controlling out other differences in education, sex and age). The standardized coefficient of the readiness-to-learn index is equivalent to about one third of the effect of the educational background of the respondent, which is usually considered to be by far the most important predictor of lifelong learning participation (see Lavrijsen and Nicaise (2015b)). Finally, the country fixed effects (with the UK as the baseline) are in most cases reduced after readiness to learn is added; this means that part of the between-country variation in participation is due to between-country variation in readiness to learn. For example, the disadvantage (lower participation) of Flanders compared to the UK is reduced from -0.32 to -0.22 when readiness to learn (see next section) is taken into account.

In Model 3, the interaction between readiness to learn and educational level is added. This interaction effect is significantly negative. This implies that the impact of attitudes on lifelong learning participation decreases with an increasing educational level. Hence, particularly among lower educated respondents, readiness to learn is an important characteristic to understand participation in lifelong learning.

Next, we perform a similar analysis to predict 'willingness to participate in lifelong learning' (instead of participation) as the dependent variable (i.e. we model the chance that a respondent was either participating in lifelong learning or reported to have been withheld by a specific barrier). The results in

Table 18 are similar to these in the corresponding model (3) from Table 17. In particular, the effect of readiness to learn on willingness to participate is significant and strong (while controlling out the effect of the educational background).

[10] We coded educational level as a continuous variable with
- -1 = 'Low' (ISCED 0-2)
- 0 = 'Middle' (ISCED 3-4)
- 1 = 'High' (ISCED 5-6)).

Table 17 Effect of readiness to learn on participation in lifelong learning. Dependent variable: participation in lifelong learning (PIAAC). Standardized coefficients. ***: p<0.01, **: p<0.05, *: p<0.10

	Model 1			Model 2			Model 3		
	Est.	Stand. Est.	Sign.	Est.	Stand. Est.	Sign.	Est.	Stand. Est.	Sign.
Intercept	1.54			0.91			0.91		
Age	-0.03	-11.39	***	-0.03	-10.79	***	-0.03	-10.75	***
Sex (1=female)	-0.14	-2.13	***	-0.12	-1.80	***	-0.12	-1.79	***
Educational level	0.93	22.07	***	0.85	20.28	***	0.99	23.66	***
Readiness to learn				0.27	7.77	***	0.27	7.83	***
Education*Readiness							-0.07		***
Country fixed effects									
AT	-0.13		***	-0.11		***	-0.11		***
DE	-0.11		***	-0.06		***	-0.06		***
DK	0.54		***	0.49		***	0.49		***
ES	-0.09		***	-0.14		***	-0.14		***
FI	0.41		***	0.34		***	0.34		***
FL	-0.32		***	-0.22		***	-0.23		***
FR	-0.76		***	-0.77		***	-0.77		***
IE	-0.12		***	-0.13		***	-0.13		***
IT	-0.99		***	-1.06		***	-1.06		***
NL	0.56		***	0.66		***	0.67		***
NO	0.37		***	0.35		***	0.35		***
SE	0.58		***	0.55		***	0.55		

Table 18 Effect of readiness to learn on willingness to participate. Dependent variable: willingness to participate (PIAAC). Standardized coefficients. ***: p<0.01, **: p<0.05, *: p<0.10

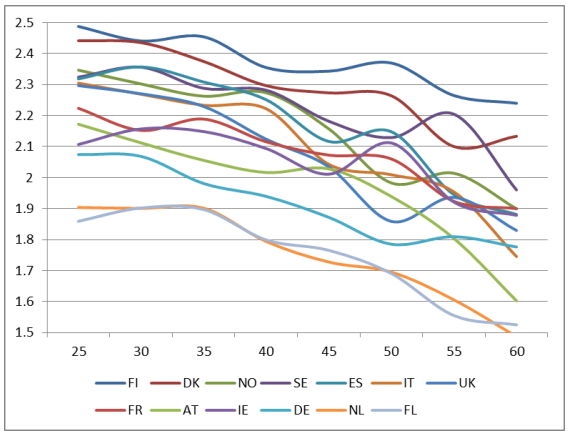
	Model 3'		
	Est.	Stand. Est.	Sign.
Intercept	1.17		
Age	-0.03	-11.55	***
Sex (1=female)	0.02	0.28	***
Educational level	0.93	22.13	***
Readiness to learn	0.33	9.60	***
Education*Readiness	-0.08		***

The importance of a positive attitude towards learning to explain lifelong learning participation can also be illustrated by comparing the average readiness to learn of each of the three groups defined above. The average readiness to learn for those who participated in lifelong learning (group A: 2.21) and those who reported specific barriers (group B: 2.16) is indeed far closer to each other than that of those not willing to participate (group C: 1.84).

Finally, analyses predicting participation on the basis of the particular variable on learning enjoyment ("*I_Q04d - I like learning new things*") give very similar results. For example, among those who participated in lifelong learning (group A) only 1.81% report an aversion towards learning (answers 'not at all' or 'very little'), which is close to the 2.27% reporting such an aversion among those who were willing to participate (group B). By contrast, of those who reported that they were not willing to participate, 8.80% reported to have an aversion towards learning, while a further 29% reported that they only liked learning 'to some extent' (compared to 17% and 18% in the other groups).

4.4 Individual differences in readiness to learn

Before analysing the effects of the educational system on the readiness to learn, we focus on the other covariates, age and sex. As Figure 15 shows, in all countries readiness to learn declines with age (although there may be small deviations due to relatively small sample sizes in PIAAC, the pattern is clearly the same in all countries). The effect of sex depends on the country, with Finland as a notable outlier, but on average men report a higher readiness to learn than women.



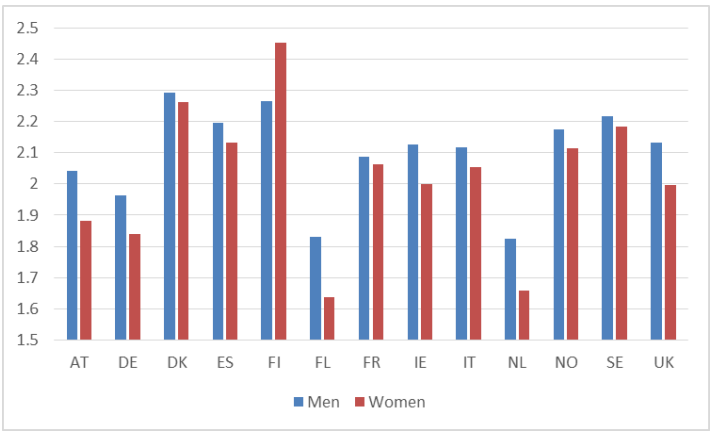


Figure 15 Readiness to learn by age and sex

The difference between the average readiness to learn of men and women was further investigated by modelling readiness to learn as a function of sex, age, educational background (see below) and work status (employment, unemployment, inactivity), separately for each country. The resulting standardized coefficients of sex are given in Figure 16.

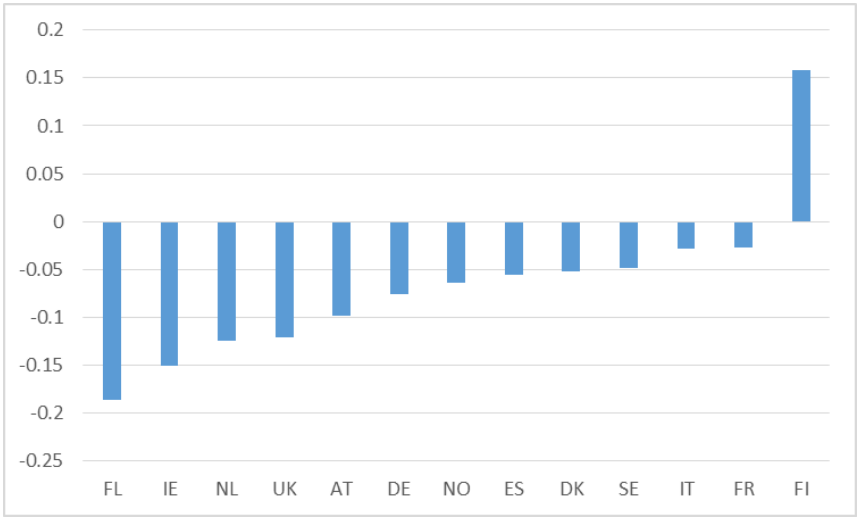


Figure 16: Effect of sex on readiness to learn

4.5 Differences between countries

4.5.1 Average readiness to learn

The next question we would like to assess is how countries score on average on this readiness to learn index. The first two columns of Table 19 shows the average value of the readiness to learn in each country, ordered from low to high. We also add the share of respondents who report a negative attitude towards learning (i.e. those who rated the statement '*I_Q04d - I like learning new things*' as 'not at all' or 'very little'). Note that Flanders, together with the Netherlands, records the lowest average readiness to learn, and the highest share of respondents declaring not to like learning at all.

Table 19 Country-averages for the index of readiness to learn of adults

	Attitudes towards learning of adults		**Initial educational system characteristics**				
Country	**Readiness to learn**	**Share reporting not liking to learn**	**Tracking age**	**Tracking index (inverted)**	**Grade repetition at age 15 (%)**	**Ability grouping (% of schools)**	**System type (Dupriez et al., 2008)**
FL	**1.74**	9.47	12	-1.04	24.9	45.7	Early tracking
NL	**1.74**	7.25	12	-0.97	26.7	80.2	Early tracking
DE	**1.9**	5.3	10	-1.79	21.4	50.6	Early tracking
AT	**1.96**	6.93	10	-1.75	12.6	46.4	Early tracking
IE	**2.06**	4.63	15	+0.13	12.0	96.4	Ab. grouping
UK	**2.06**	5.84	16	+1.08	2.2	99.1	Ab. grouping
FR	**2.08**	3.63	15	+0.48	36.9	N/A	Grade retention
IT	**2.08**	6.17	14	+0.18	16.0	55.6	Grade retention
NO	**2.15**	2.08	16	+1.08	0.0	73.4	Ind. integration
ES	**2.16**	4.17	16	+0.80	35.3	60.4	Grade retention
SE	**2.2**	1.71	16	+1.06	4.6	74.2	Ind. integration
DK	**2.28**	1.8	16	+0.93	4.4	49.6	Ind. integration
FI	**2.36**	2.71	16	+0.93	2.8	57.5	Ind. integration

As age and sex are strongly related to the readiness to learn, we performed a regression analysis explaining the average readiness to learn on the basis of the age, sex, and a country fixed effect. The resulting estimates, together with their corresponding Wald 95% confidence limits, are given in Figure 17. These estimates show that differences between countries are (statistically) relevant, and that differences in sample composition (in particular regarding the average age of the respondents) do not distort the country rankings.

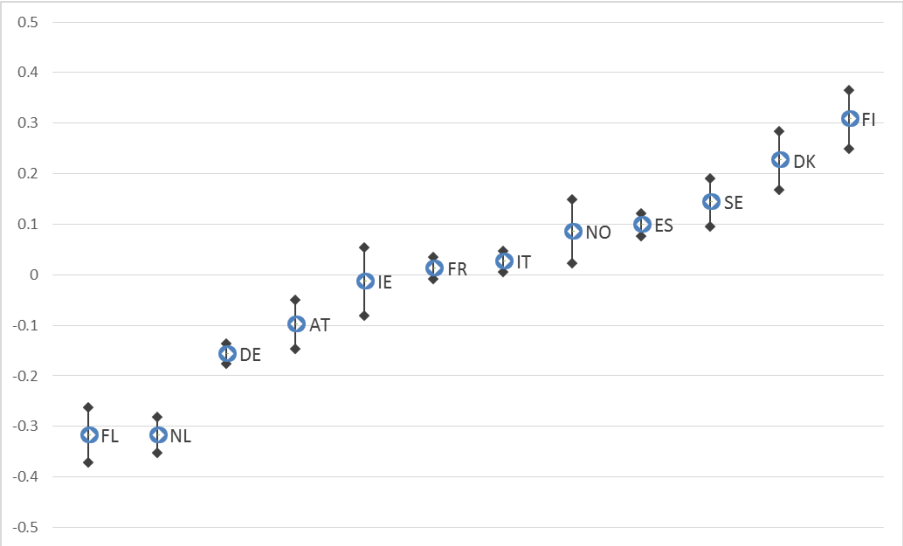


Figure 17: Country fixed effects (and 95% Wald confidence intervals) on readiness to learn, controlling for age and sex

We then add to Table 19 the information on three systematic features of the educational system expected to influence readiness to learn discussed. When we now compare the ranking based on the average readiness to learn with the educational system characteristics, we observe a number of interesting patterns.

First, we note that the four countries with the lowest readiness to learn (Flanders, the Netherlands, Austria and Germany) are also the countries with the earliest tracking. This is illustrated in Figure 18, in which we show the simple bivariate relationships between readiness to learn on the vertical axis and two indicators for tracking on the horizontal axes. At first glance, in both instances, early tracking seems to correspond to a lower readiness to learn (the correlation is 0.77 (using tracking age) resp. 0.78 (using the Index of Tracking)). This confirms (in an adult population) the corresponding observation in PISA (for 15 years olds), where it was found that motivation to learn was at a lower average level in early tracking systems (Borgonovi (2014)). However, this is of course only a provisional observation, based on a simple bivariate correlation, which will have to be assessed with more scrutiny.

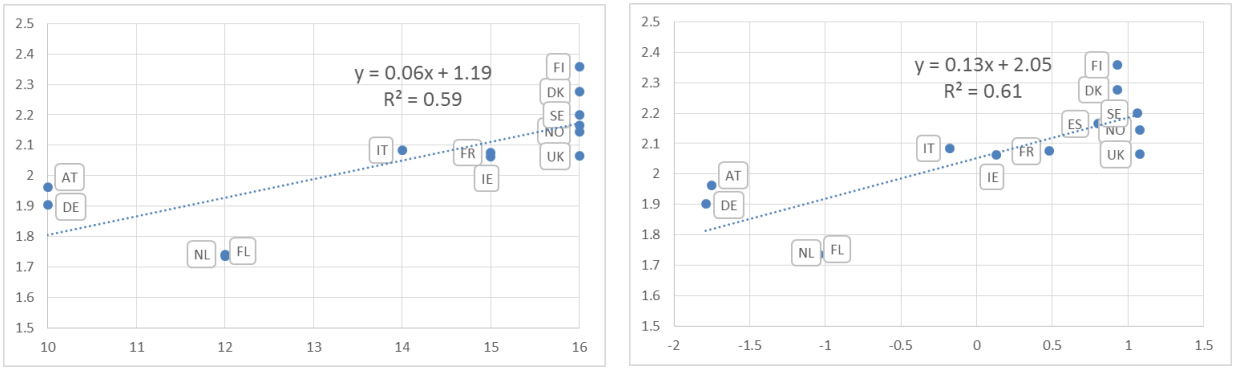


Figure 18 Correspondence between tracking age (left) resp. tracking index (inverted) (right) in initial education systems and average readiness to learn of adults (vertical)

Similarly, the middle of the ranking (note that the average values are rather close to each other here) is occupied by countries which score high on the use of grade repetition or on ability grouping. A simple bivariate analysis already suggests that countries with higher grade retention rates report a lower readiness to learn, although the relationship is less strong (Figure 19).

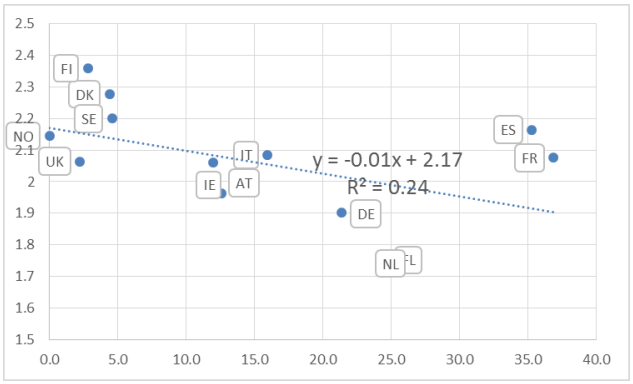


Figure 19 **Correspondence between grade repetition rates (horizontal) and readiness to learn of adults (vertical)**

Hence, when we compare the average readiness to learn to the typology integrating all three educational system characteristics, based on Dupriez, Dumay, and Vause (2008), a remarkable correspondence emerges, with the Scandinavian countries (individual integration) succeeding better in promoting positive attitudes towards learning (Figure 20).

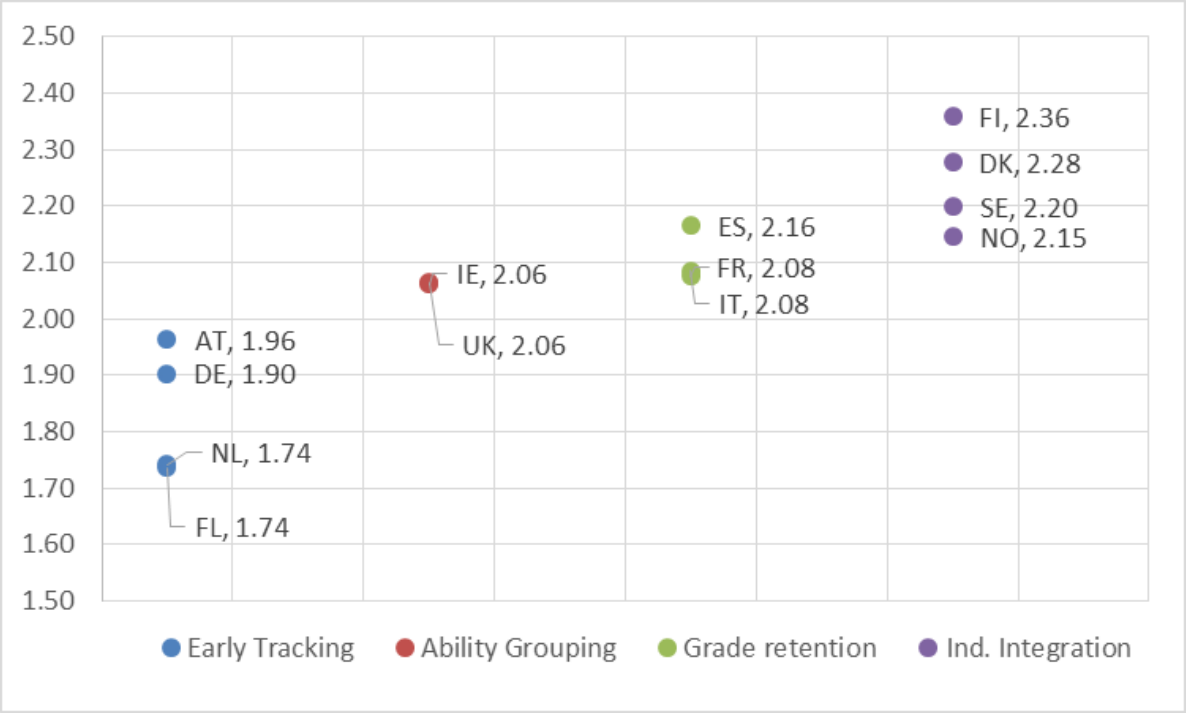


Figure 20 **Correspondence between average readiness to learn of adults and intial educational systems typology**

Finally, we perform some multivariate analyses to further check the effect of educational system characteristics on readiness to learn[11]. The resulting estimates in Table 20 confirm that early tracking in particular is associated with a lower readiness to learn, while the intensive use of grade retention is also associated with a significantly lower readiness to learn.

Table 20 Multivariate analysis of the effect of educational characteristics on the readiness to learn ***p < 0.01, **p < 0.05, *p< 0.1

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Tracking age	0.06***			0.05***		0.06***	
Tracking index (inverted)		0.13***			0.12***		0.12***
Grade retention (%)			-0.007*	-0.004	-0.003	-0.005	-0.004
Ability grouping (1/0)						-0.13	-0.11
Adj. R^2	0.55	0.58	0.17	0.58	0.58	0.62	0.60
N	13	13	13	13	13	13	13

[11] It should be noted that in primary school assessments such as TIMMS and PIRLS (see below), we usually record an *inverse* relationship between country-average attitudes and country-average skills (though on the individual level, the relationship is positive) (cf. Boe, May, Barkanic, and Boruch (2004)). Hence, in primary education, there seems to exist some trade-off between focusing on skills development on one hand and creating a positive outlook on learning on the other. Fortunately, among adults there seems *not* to exist such a trade-off: the correlation between country-average attitudes and country-average skills is virtually zero (rho = -0.08 for numeracy and rho = -0.03 for literacy), with the highest performing countries also succeeding in generating positive outlooks (Sweden, Norway, Finland). Hence, for young adults, there does not have to be a choice between delivering high-quality skills and delivering a high readiness to learn.

4.5.2 Share of adults who do not like to learn

Similarly, Figure 21 compares the share of adults in each country who do not like learning (i.e. answering 'not at all' or 'very little' to the statement '*I like learning new things*') with information on tracking age, the tracking index (inverted), and the share of grade repeaters at age 15. Secondly, Figure 22 further illustrates the correspondence with the educational systems typology developed above. In all figures, the Y-axis is reversed, so that countries with a smaller share of respondents not liking to learn are on top of the figure. The results are very similar to the observations made in the previous section, with the individual integration countries apparently succeeding better in preventing negative attitudes towards learning, while the early tracking countries have the highest shares disliking learning.

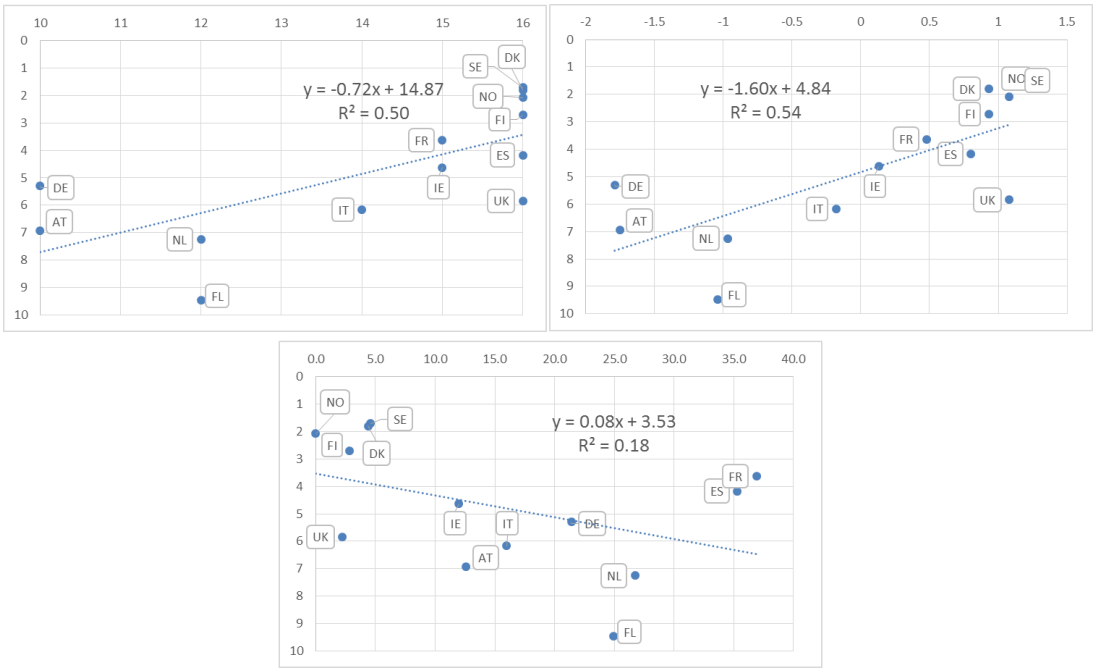


Figure 21 **Correspondence between share of respondents who do not like to learn (PIAAC, inversed Y-axis) and tracking age (upper left), tracking index (inverted, upper right) resp. grade repetition (below)**

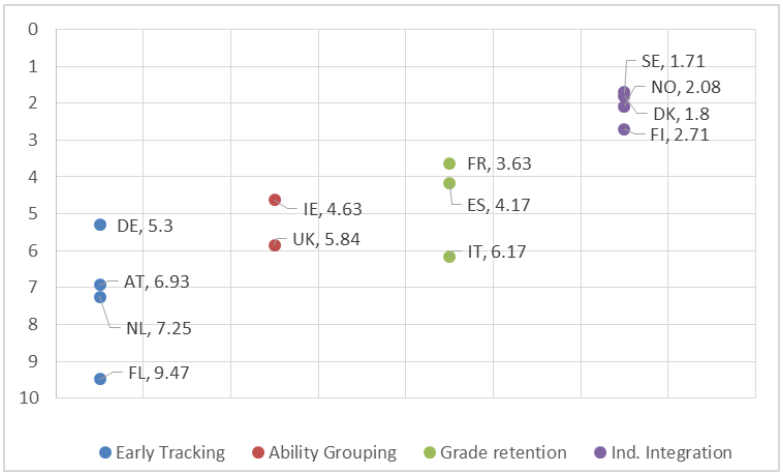


Figure 22 **Correspondence between share of respondents who do not like to learn (PIAAC, inversed) and educational systems typology**

4.6 Differential effects across the educational spectrum

As discussed in section 0, the design of the educational system might affect different groups of students in different ways. In particular, weak students may suffer from the 'stigma' generated by external differentiation (tracking and/or grade retention), but their academic self-concept might also benefit from being selected into a 'smaller pond' (being in a low-performing group reduces the exposure to better performing peers). Strong students might bask in the 'reflected glory' of being in a strong track and benefit from the positive learning climates in such tracks, but their academic self-concept might be out under stress because of their reference group performs at a high level as well (see 0). From the previous sections, we know that the *overall* effect of early tracking and grade retention on attitudes towards learning seems to be a negative one. In this section, we will consider how this effects breaks down across different groups in the educational achievement spectrum. The first three columns in Table 21 summarize the average readiness to learn by the highest level of qualification (low: ISCED 0-2, middle: ISCED 3-4, high: ISCED 5-6). Countries are ordered by their average readiness to learn among low qualified respondents.

Table 21 Readiness to learn across the educational spectrum

	(1) Average readiness to learn by qualification			**(2) Score point difference in readiness between qualifications**		**(3) Relationship (regression estimate) between readiness to learn and…**		
	Low	Middle	High	Low-middle	Low - high	Qualification	Numeracy	Literacy
FL	1.29	1.62	2.05	0.33	0.76	0.37	0.58	0.60
NL	1.33	1.70	2.10	0.37	0.77	0.36	0.67	0.71
DE	1.55	1.81	2.13	0.26	0.58	0.30	0.46	0.49
AT	1.62	1.94	2.35	0.32	0.73	0.32	0.57	0.62
UK	1.63	2.03	2.39	0.40	0.76	0.35	0.63	0.60
IE	1.77	2.05	2.36	0.28	0.59	0.30	0.48	0.52
FR	1.78	2.06	2.34	0.28	0.56	0.26	0.44	0.48
IT	1.81	2.26	2.69	0.45	0.88	0.41	0.48	0.51
ES	1.91	2.20	2.51	0.29	0.60	0.29	0.35	0.47
DK	1.91	2.21	2.52	0.30	0.61	0.27	0.50	0.47
NO	1.94	2.08	2.32	0.14	0.38	0.17	0.26	0.38
SE	1.94	2.14	2.43	0.20	0.49	0.23	0.47	0.55
FI	2.06	2.31	2.50	0.25	0.44	0.18	0.28	0.32

The first observation is that in all countries higher qualified respondents report more positive attitudes towards learning. This is of course not surprising and might be caused by effects in both directions: respondents with a higher initial educational achievement may have had more positive educational experiences, and/or respondents with a higher (initial) readiness to learn may have ended up with a higher qualification. The country average of the readiness to learn among *lower* educated respondents is again strongly related to the typology of educational systems put forward by Dupriez, Dumay, and Vause (2008) (Figure 23, left panel). However, note that this correspondence is also reproduced for the high-educated adults (Figure 23, right panel), even if it becomes somewhat more blurred. For these high achievers, we observe in particular a better ranking for the grade

retention countries, which was to be expected, as in priniple high performers have not been subjected to grade retention practices, cf. 0. However, the fact that early tracking countries are also reporting weaker attitudes among high achievers may be more surprising, and might question the validity of our approach.

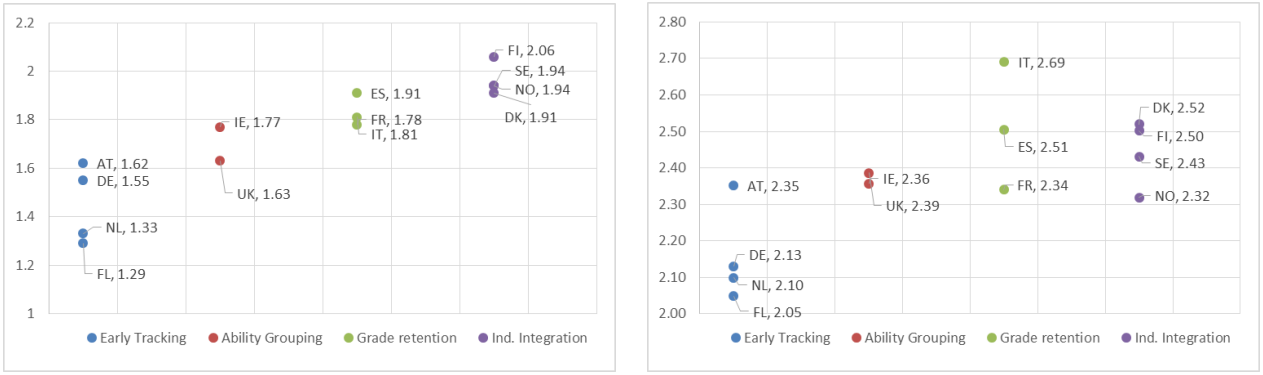


Figure 23 Readiness to learn among low-educated (left) and high-educated (right) adults, by type of initial educational system (Dupriez et al., 2008)

To further investigate the gap between the educational categories, a second set of columns in Table 21 thus reports the score point differences between the three levels. Moreover, as the observed relationships between educational level and readiness to learn could also be due to other factors that are correlated with educational backgrounds (for example, lower educated individuals are on average older, and older respondents report a lower readiness to learn on average), we also ran for each country a regression predicting readiness to learn on the basis of the educational level (as a continuous variable taking three values), controlling for age and sex. We did the same using numeracy and the literacy proficiency (scores x 100) as the predictor, instead of the qualification of the respondent. The results are reported in the third set of columns in Table 21 and visualised in Figure 24. In particular in three early tracking countries (Flanders, the Netherlands, and Austria), but also in the UK and Italy (and not in Germany), readiness to learn seems strongly related to educational background.

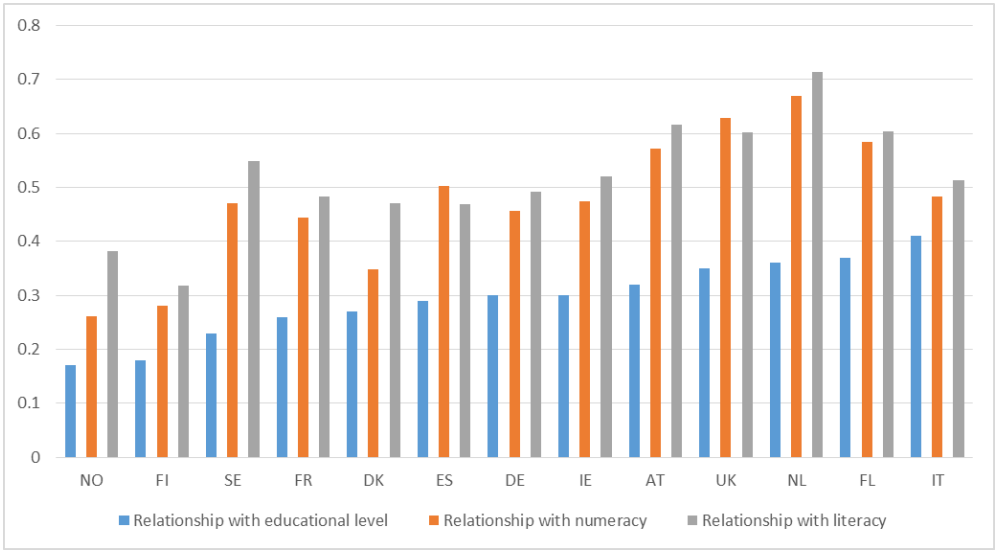


Figure 24 Relationship between readiness to learn and educational level, numeracy, and literacy

Finally, for the medium-educated group (secondary qualification), we further distinguish between those with a vocational oriented secondary degree and respondents with an academically/general oriented secondary degree (cf. Lavrijsen and Nicaise (2014)). Table 22 shows the average readiness for both groups, together with the size of the gap between both groups; we again run a regression to control for the effect of age and sex. The table is again ordered by the readiness to learn of the vocationally educated respondents. First, respondents with a vocational secondary degree report lower levels of readiness to learn than their counterparts with a general degree (except for Ireland). Secondly, the difference between both varies across countries, with early tracking systems showing the lowest readiness-to-learn among their vocational education graduates. In particular, we note again the position of Flanders, where vocationally educated respondents report a markedly lower readiness to learn then their general education counterparts.

Table 22 Readiness to learn among medium-educated respondents

	Vocational oriented	General oriented	Score point difference	Effect of vocational orientation on readiness to learn (regression estimate
FL	1.41	1.72	0.31	-0.39
NL	1.65	1.88	0.23	-0.18
DE	1.80	2.35	0.56	-0.23
AT	1.91	2.35	0.44	-0.17
UK	2.01	2.04	0.03	-0.10
FR	2.02	2.18	0.16	-0.09
NO	2.05	2.16	0.10	-0.16
SE	2.05	2.20	0.15	-0.23
IT	2.11	2.30	0.19	-0.02
IE	2.15	1.96	-0.19	0.10
DK	2.15	2.36	0.21	-0.20
ES	2.18	2.20	0.02	0.01
FI	2.27	2.55	0.28	-0.12

Chapter 5 Differences in attitudes towards learning between primary school and adulthood

5.1 From a cross-sectional analysis to a 'differences-in-differences'-approach

The cross-sectional and cross-country analyses discussed above were mainly based on a comparison of the current attitudes of adults towards learning, linking these attitudes with information on their educational background and national systems of initial education. However, such data do not yet allow to draw firm conclusions on the causal effect of educational system design on these attitudes, for two reasons.

First, as we discussed above, learning attitudes cannot be considered exogenous to educational achievement: negative attitudes towards schooling may be both the cause and the effect of lower achievement at school. A large difference in attitudes by educational background could mean that low-educated adults have been subjected to negative learning experiences, culminating in a markedly negative attitude towards learning; but it could also mean that e.g. students with a negative outlook on learning have a higher probability of ending up with a low educational qualification.

Secondly, there is a risk of unobserved confounder bias that may affect any cross-sectional cross-country study: countries have many different features that may influence the observed outcomes, and this may bias the observed effects of a single educational system characteristic. Studies therefore have to take such possible confounders into account in order to provide unbiased estimates of the effect of the educational system characteristic; but unfortunately, we will never know for sure if indeed we took all relevant confounders into account. Moreover, a particular feature of the current study is that our variables are based on self-reporting of attitudes by respondents. As argued for example by Pena (2007), cultural differences in response behaviour and difficulties to provide fully 'equivalent' translations of questionnaires may affect the validity of such self-reporting surveys on attitudes: do these questions really mean the same thing in all countries involved?

So far, we have tried to minimize these biases by using only data from a set of relatively comparable, Western European countries. However, in this section, we will use a more sophisticated approach to further reduce the effect of possible confounders. In particular, we will combine data on attitudes towards learning that have been measured on two measurement points, one 'before' (or more correctly: during the first years) and one 'after' going through the educational system. We will then assess how the educational system has influenced the *change* in attitudes towards learning that has occurred between both measurements. This approach is similar to a longitudinal study, but as longitudinal cross-country data on attitudes towards learning do not exist, we will opt instead for a diff-in-diff design. In such a design, we compare country-average attitudes towards learning measured on two independent occasions. In particular, we will compare the average attitude towards learning

measured among adults in PIAAC with a similar measure collected in primary education, in particular measured in PIRLS and in TIMSS, which are both collected in 4th grade of primary school. This approach is expected to further remove possible bias by unobserved confounders (including cultural response behaviour), as such confounders can be expected to affect the attitudes measured on *both* measurement points. By contrast, the system characteristics of secondary education (e.g. tracking, grade retention in secondary education) affect the learning attitudes measured at the second measurement point only. Hence, the differences between countries observed in the difference of the measured attitudes between both measurement points will be related to their design of secondary education[12]. Such a "differences-in-differences"-approach bears similarities with the frequently cited article by Hanushek and Woessmann (2006), who exploited a similar methodology to show that early tracking increased the achievement gaps between low and high performers, and to Lavrijsen and Nicaise (2015a), where it was used to study the impact on social inequalities in reading achievement.

5.2 Comparing attitudes to learning among adults (PIAAC) with attitudes towards reading in primary school (PIRLS)

5.2.1 Data

PIRLS (Progress in International Reading Literacy Study) is an international study of reading achievement in fourth grade, conducted by the International Association for the Evaluation of Educational Achievement (IEA). We use two waves of PIRLS (2001 and 2006).
Pupils participating in PIRLS also filled out a background questionnaire, in which they indicated their agreement (on a 4-level Likert scale: 'agree a lot', 'agree a little', 'disagree a little', 'disagree a lot') with a number of statements:

- I enjoy reading
- I like talking about books with other people
- I would be happy if someone gave me a book as a present
- I think reading is boring (reverse coded)
- I read only if I have to (reverse coded)

The answers to these questions were aggregated into Index of Students' Attitudes Towards Reading (SATR). Similarly to the approach we adopted for PIAAC (where we used the aggregate readiness to learn-index), we will make use of this aggregated SATR-index, which gives the most complete overview of attitudes to learning. Additionally, we will consider in particular the answers to the statement "*I enjoy reading*", which match most closely with the PIAAC-variable "*I_Q04d - I like learning new things".*

[12] While this approach is in particular appropriate for measuring the effect of the early onset of tracking (which is a clear event happening after the first measurement point), it may be less suited for the evaluation of grade retention. Experiencing grade retention in the first years of primary school may have an impact at the attitudes towards schooling not only immediately after the retention, but also on a longer time frame (see §4.1.2.2). Moreover, the use of grade retention in primary and secondary education is correlated. Hence, in the case of grade retention we cannot use the first measurement point as a 'pure' pre-treatment indication: countries with high grade retention use in secondary school will on average have already used grade retention in primary education to a larger extent as well, and this may affect the 'pre-treatment' measurement as well.

5.2.2 Method

We will compare attitudes reported in PIRLS (2001/2006) and PIAAC (2012) in the following way:

1) We select countries that participated in both surveys.
2) We select from PIAAC the cohort that corresponds most closely with the cohort surveyed in PIRLS. In particular, we will
    a. compare the sample from PIRLS 2001 (birth year: 1991) with the subsample from PIAAC that was born between 1987 and 1992 (i.e. age cohort 20-25; PIAAC only reports 5-year age bands);
    b. compare the sample from PIRLS 2006 (birth year: 1996) with the subsample from PIAAC that was born between 1992 and 1997 (i.e. age cohort 15-20).
3) To increase comparability across surveys, we standardize the variables relating to reading/learning enjoyment and the aggregate indices to have average 0 and standard deviation 1.
4) We calculate for each country and for each survey the country-average value for learning enjoyment and for the aggregate index.
5) We compare these country averages by plotting them against each other as in Figure 25. Here, we plot the attitudes towards learning recorded in PIRLS on the X-axis and the attitudes towards learning recorded in PIAAC on the Y-axis. In general, there will be a positive association between both (countries who report more positive attitudes towards learning in primary education will report more positive attitudes among adults as well).
    a. Countries that are situated *above* the regression line apparently report more positive attitudes towards learning among adults than would be expected on the basis of the attitudes recorded in primary school; their (secondary) education system apparently has improved (relative to the change in other countries) attitudes towards learning.
    b. Countries *below* the regression line report less positive attitudes towards learning among adults than would be expected on the basis of the attitudes recorded in primary school; these (secondary) education systems apparently have reduced (relative to the change in other countries) attitudes towards learning.

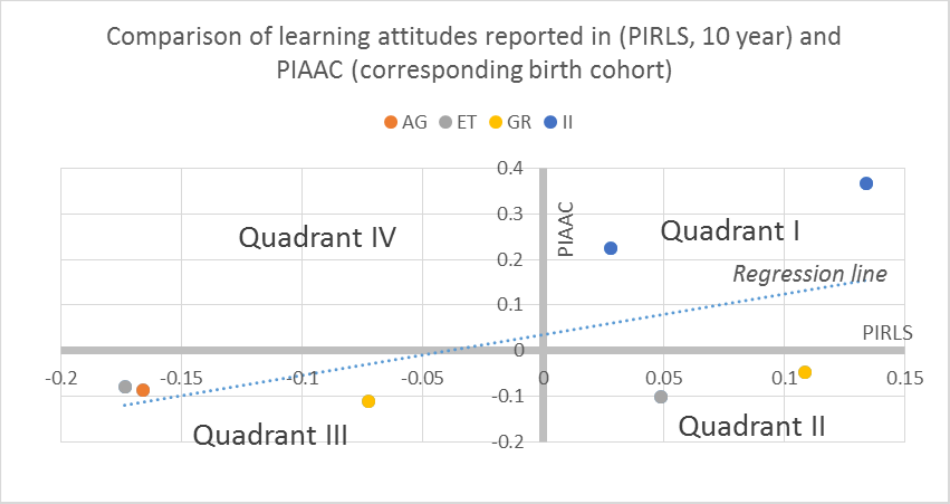


Figure 25 Comparison of attitudes recorded in PIRLS and PIAAC

6) We label each educational system as an ability grouping (AG), early tracking (ET), grade retention (GR) or individual integration (II) system (see Table 16). This gives an indication on which types of educational systems perform best in promoting positive attitudes towards learning.

7) We perform a quantitative analysis in which we predict attitudes towards learning among adults on the basis of the attitudes recorded in primary education on one hand, and characteristics of the (secondary) educational system on the other.

5.2.3 Results

5.2.3.1 Descriptive statistics

The participating countries and the descriptive statistics for PIRLS 2001 and 2006, together with those for the corresponding PIAAC-cohorts, are given in Table 23. The table shows that from the 13 Western-European countries represented in PIAAC, 7 also participated in PIRLS 2001 and 11 in PIRLS 2006.

Table 23 Descriptive statistics (BFL: Flanders)

Country	PIRLS 2001	PIAAC, age 20-25	Country	PIRLS 2006	PIAAC, age 15-20
DEU	5,999	487	AUT	4,774	401
ENG	2,672	650	BFL	4,257	415
FRA	3,281	542	DEU	7,084	479
ITA	3,341	272	DNK	3,783	442
NLD	3,774	433	ENG	3,707	460
NOR	3,101	425	ESP	3,721	404
SWE	5,212	405	FRA	4,142	506
			ITA	3,392	211
			NLD	3,978	400
			NOR	3,633	453
			SWE	4,132	335

5.2.3.2 Graphical indications

In Figure 26, for each of both waves of PIRLS we compare enjoyment (left) and aggregate attitudes (right) with the corresponding PIAAC-cohort. This yields four comparisons. Figure 26 shows that in each of these cases, there is a positive association between (country-average) attitudes towards learning recorded in primary education on one hand and the corresponding attitudes recorded in the adult sample on the other.

When comparing the position of the different countries, a first observation is that the individual integration countries are in all instances above the regression line. Hence, these educational systems apparently report more positive attitudes towards learning among adults then would be expected on the basis of the attitudes recorded in primary school. This type of educational system, which avoids grade repetition, early selection or streaming of students and focuses on integration instead, apparently succeeds in improving attitudes towards learning among its students. On the other hand, the early tracking and grade retention countries report on average less positive attitudes towards learning among adults than would be expected on the basis of the attitudes recorded in primary school. This points to a negative effect of such separation practices on the development of attitudes towards learning. Note in particular that Flanders already stands out in primary education (PIRLS 2006) with

relatively negative learning attitudes, which deteriorate further through its selective secondary education system (the disadvantage further increases).

Figure 26 Comparison of learning attitudes measured in two PIRLS-waves and the corresponding PIAAC-cohorts

5.2.3.3 Quantitative analysis

We perform again some multivariate analyses to further check the effect of educational system characteristics on readiness to learn, taking into account the information on the readiness to learn in primary education. For the educational system characteristics, we use the inverted tracking index (results with tracking age as the predictor are very similar), ability grouping, and the use of grade repetition in the first cycle of secondary education on the other. For the latter, the values are different from those listed in Table 16, as we focus here on grade repetition in *secondary* education only (instead of the total in primary and secondary education). However, the correlation between both sets of values is very high (rho = 0.88). All estimates in Table 24 are standardized estimates.

We observe that country-average attitudes towards reading in primary education are consistently related with country-average attitudes towards learning among adults. Part of the country-differences in the readiness to learn observed in PIAAC seem to be explained by similar differences existing yet in primary education. However, the educational system characteristics have their own explanatory power as well; in particular, postponing tracking seems to be associated with a higher readiness to learn, while the intensive use of grade retention is associated with a lower readiness to learn. However, note that most estimates, though consistent over the different specifications, do not reach significance. The small country samples preclude an adequate estimation of the effect of different characteristics simultaneously.

Table 24 **Standardized regression estimates for predicting average attitudes among adults (PIAAC) based on country-average attitudes in PIRLS and a set of educational characteristics (***p<0.01, **p<0.05, *p<0.1)**

	PIRLS 01 - PIAAC (20-25)				PIRLS 06 - PIAAC (15-20)			
	Attitudes		Enjoyment		Attitudes		Enjoyment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attitudes in primary education	0.15	0.97*	0.50	0.80***	0.35	0.75*	0.17	0.13
Tracking index (inverted)	0.69		0.51		0.58*	0.48	0.52	0.52
Grade repetition		-1.11*		-0.77**		-0.59		-0.43
Ability grouping						0.04		-0.26
Adj. R^2	0.26	0.42	0.38	0.84	0.31	0.39	0.10	0.11
N	7	7	7	7	11	11	11	11

5.3 Comparing attitudes to learning among adults (PIAAC) with attitudes towards mathematics and reading in primary school (TIMSS)

5.3.1 Data

The Trends in International Mathematics and Science Study (TIMSS) is a second international assessment in primary school (4th grade) organised by the IEA. Unlike PIRLS, TIMSS is focussed on the mathematics and science knowledge of students. We use two waves of TIMSS: 2003 and 2007 (a first assessment of primary school attitudes was already made in 1995, but the number of countries participating in both this assessment and PIAAC was too small (only 5) to allow for a meaningful comparison).

Pupils participating in TIMSS also filled out a background questionnaire, in which they indicated their agreement (on a 4-level Likert scale: 'agree a lot', 'agree a little', 'disagree a little', 'disagree a lot') with the following statements:

- I enjoy learning mathematics
- Mathematics is boring (only TIMSS 2007)
- I like mathematics (only TIMSS 2007)

In TIMSS 2007, the answers to these questions were also aggregated into an Index of Students' Positive Affect Toward Mathematics (PATM). Similarly to the approach adopted for PIAAC and PIRLS, we make use of the aggregated index. We consider separately the answers to the statement "I enjoy learning mathematics" as well, because this matches most closely with the PIAAC-variable "I_Q04d - I like learning new things".

Additionally, we make use of the answers to another TIMSS-question on reading (!) enjoyment: "*On a normal day, how much time do you spend before or after school for: reading a book for enjoyment*",

where possible answers range from “no time” over “less than 1 hour”, “1-2 hours”, 2-4 hours” until “more than 4 hours”. We use the average score on this variable as a proxy for joy of reading.

5.3.2 Method

The attitudes reported in TIMSS (2003 and 2007) and PIAAC (2012) are compared in a similar way as in the previous section (see §0). The set of countries participating in both TIMMS (2003 resp. 2007) and PIAAC is yet smaller (5 resp. 8 countries) than in the previous section with PIRLS. Such a small sample jeopardises sound statistical claims. Moreover, the sample surveyed in both waves of TIMSS (born in 1993 resp. 1997) corresponds to the same cohort in PIAAC (between 15 and 20 years in 2012). Hence, we prefer to merge TIMSS 2003 and TIMSS 2007 into a single sample and to perform only one comparison between attitudes measured in TIMSS (2003 and 2007) and PIAAC (15-20 years cohort). To ensure that both waves of TIMSS are comparable, we compared the answer patterns for the four countries that participating in both waves. Figure 27 confirms that the results are comparable between both waves.

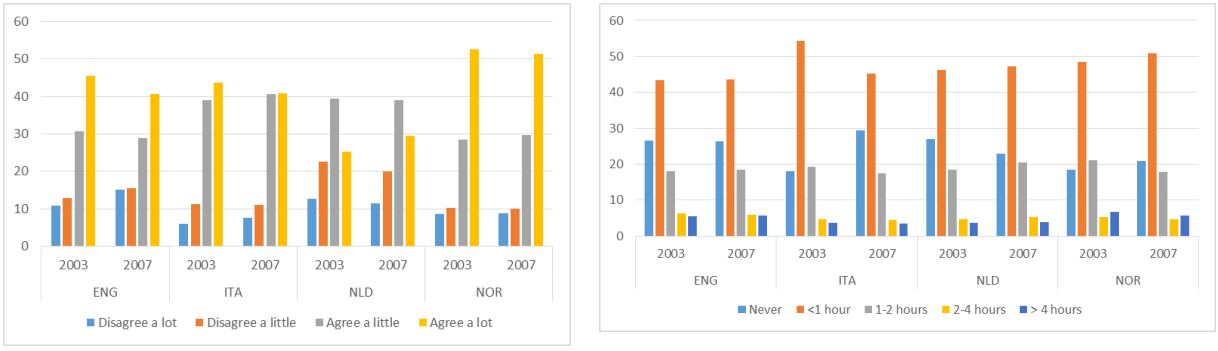


Figure 27 Comparison of the answers to the statement "I enjoy learning mathematics" (left) and “hours spent at home reading for enjoyment” for countries participating in both TIMSS 2003 and TIMSS 2007

5.3.3 Results

5.3.3.1 Descriptive statistics

The participating countries and the descriptive statistics for TIMSS 2003 and TIMSS 2009, together with the corresponding PIAAC-cohort, are listed in Table 24. The table shows that from the 13 Western-European countries included in PIAAC, 9 also participated in TIMSS 2003 or TIMSS 2007.

Table 25 Descriptive statistics

Country	TIMSS 2003	TIMSS 2007	Full TIMSS sample	PIAAC, age 20-25
AUT	-	4070	4070	401
BFL	4395	-	4395	415
DEU	-	4758	4758	479
DNK	-	3181	3181	442
ENG	3069	3689	6758	460
ITA	4124	4253	8377	211
NLD	2746	2796	5542	400
NOR	3980	3880	7860	453
SWE	-	4171	4171	335

5.3.3.2 Graphical indications

We now compare mathematics enjoyment (left), measured in 2003 and/or 2007, and aggregate attitudes (right), measured in 2007 only, with the corresponding information for the matched PIAAC-cohort. We also use reading enjoyment at home (below), measured in 2003 and/or 2007.

Figure 28 shows that in all three comparisons, there is a positive association between the country-average attitudes recorded in primary education on one hand and the corresponding attitudes recorded in the adult sample on the other. Moreover, similarly to our observations for PIRLS (§0), that the individual integration countries are mostly above the regression line, indicating that individual integration systems succeed in boosting attitudes towards learning further across the education career. On the other hand, the early tracking countries and the (single) grade retention country report on average less positive attitudes towards learning among adults than would be expected on the basis of the attitudes recorded in primary school. Again, Flanders stands out with relatively negative views on mathematics and reading already in primary education.

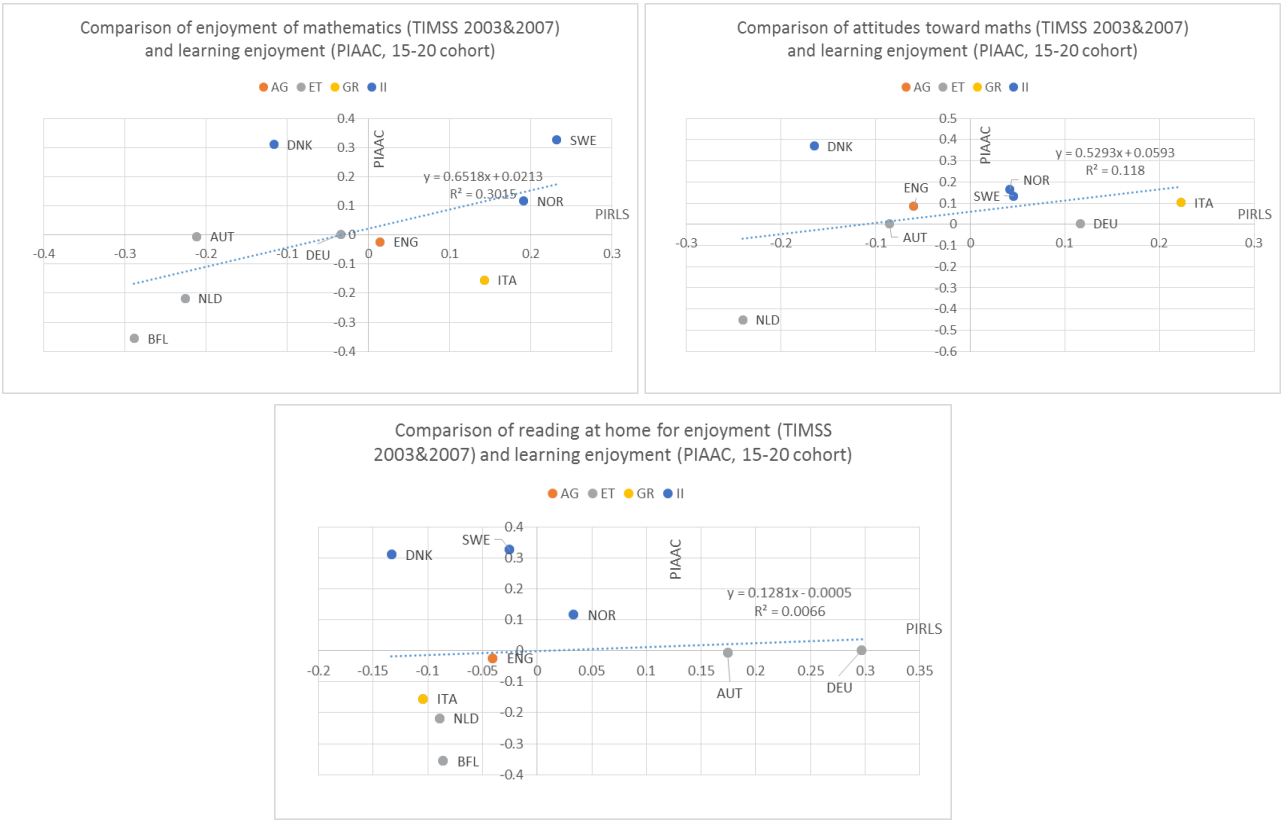


Figure 28 Comparison of learning attitudes measured in two TIMSS-waves and the corresponding PIAAC-cohort

5.3.3.3 Quantitative analysis

The approach is similar to section 5.2.3.3 and yields similar results (Table 26). Country-average attitudes towards mathematics in primary education are consistently positively related with country-average attitudes towards learning among adults. Tracking again produces a lower readiness to learn, as well as grade retention. However, note again that most estimates, though consistent over the different specifications, do again not reach significance due to the small country samples.

Table 26 Standardized regression estimates for predicting average attitudes among adults (PIAAC) based on country-average attitudes in TIMSS and a set of educational characteristics

	Overall attitudes		Mathematics enjoyment		Reading at home for enjoyment	
	(1)	(2)	(3)	(4)	(5)	(6)
Attitudes in primary education	0.34	0.67	0.28	0.37	0.60*	0.30
Tracking index (inverted)	0.57		0.41		0.92**	
Grade repetition		-0.62		-0.54		-0.75**
Adj. R^2	0.21	0.15	0.20	0.42	0.47	0.36
N	8	8	9	9	9	9

5.4 Differential effects across the educational spectrum

In section 0, we found that readiness to learn depends on the educational background of the respondents. It also appeared justified to expect that educational system characteristics influence the development of attitudes depending on the profile of students. Hence, in this section, some of the estimations from the previous sections are reproduced separately for weak and strong students. To this end, the sample from each country was divided into four quartiles based on the reading literacy (in the comparisons using PIRLS) resp. numeracy (in the comparisons using TIMSS). For example, we compare the learning attitudes of students with literacy scores in PIRLS in the bottom 25% of their country with the attitudes of adults with a literacy score in the bottom 25% in PIAAC; etc. The rest of the analysis follows the scheme applied in the previous sections.

One important drawback of this identification strategy is that it has to assume that the composition of the groups in the first and the second measurement match with each other. The principle behind the diff-in-diff-analysis is that the difference between the average attitudes of the 'weak performers' in primary school and that of the 'weak performers' among adults reflects *the effect of the system on 'the attitudes of weak performers*. This is based on the assumption that both groups of weak performers largely overlap: today's weak performers in primary school would be the weak performers among adults tomorrow. This assumption can obviously be criticized. In particular, it could be argued *that the (early) attitudes towards learning themselves could bias this identification*. Indeed, more positive (early) attitudes probably lead to a higher achievement (later on). Imagine for example the case of a weak performer in primary school with a strong positive attitude towards learning. It is plausible that such an individual, when assessed as an adult, would have moved into a better performing group. The other way round, his (previous) place in the 'low performers'-group might have been occupied by an adult who was a strong performer in primary school, but with weaker attitudes. Hence, even when the educational system does not have any effect on attitudes, the average attitude in the low performing group would have been estimated to have been *reduced* over time, and that of the high performing group to have been *increased*, solely because of this process of ongoing self-selection of respondents with a more positive attitude into the higher performing group. To the extent that this self-selection bias occurs everywhere, it would not bias cross-country comparisons. However, it could be argued that the strength of the bias is related to the permeability of the educational system: if students are mobile (i.e. if their rank in the system can change more easily), group membership may be more dependent on early attitudes towards learning, and the groups at the first and the second measurement point may be less comparable in their composition.

With this important caveat in mind, Table 27 lists the outcomes of the analyses, performed separately for each proficiency quartile, explaining readiness to learn among adults as a function of educational system characteristics and attitudes towards learning among primary school pupils. The first observation is that in all subgroups, the results from the previous sections are reproduced: early tracking and grade retention have negative effects on readiness to learn over the entire educational spectrum. However, surprisingly, early tracking has *stronger* effects in the upper part of the achievement distribution. This could be due to the effects of tracking on the academic self-concept of strong performers (see Table 14), but it may also point at specification problems – have any country-specific factors not been taken into account adequately?

For grade retention, we find the strongest effects at the lower end of the spectrum (with the exception of the TIMSS/PIAAC-combination, but note the low R^2). This was to be expected, as low performers are

more likely to be negatively affected by stratification mechanisms. However, even in the upper quartiles the estimated effect of grade retention is negative, which is less plausible (these students are less likely to have suffered from stratification). Again, this seems to qualify our earlier observations on the (overall) negative effect of grade retention of attitudes towards learning; possibly, these observations were also distorted by unobserved country-specific factors. Finally, note that overall, the country-average learning attitudes of adults are more strongly related to those of primary school students at the lower end of the spectrum.

Table 27: Regression estimates for predicting average attitudes among adults (PIAAC) based on country-average attitudes in PIRLS and TIMSS, by proficiency quarters (*p<0.01, **p<0.05, *p<0.1)**

	PIRLS 01 - PIAAC (20-25)				PIRLS 06 - PIAAC (15-20)				TIMMS 03/07 – PIAAC (15-20)			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Attitudes in primary education	0.34	0.61	0.11	-0.46**	0.57*	0.23	0.23	0.13	0.55	0.43	0.12	0.18
Tracking index (inverted)	**0.38**	**0.43**	**0.66**	**0.87****	**0.29**	**0.58***	**0.68****	**0.59***	**0.17**	**0.49**	**0.72***	**0.63**
Adj. R^2	0.08	0.34	0.18	0.91	0.30	0.22	0.35	0.17	0.15	0.26	0.28	0.12
N	7	7	7	7	11	11	11	11	8	8	8	8
Attitudes in primary education	1.12**	1.11**	0.56	0.17	1.05***	0.72	0.65	0.15	0.63	0.70	0.61	0.45
Grade repetition	**-1.11****	**-0.72**	**-0.63**	**-0.86**	**-0.71****	**-0.72**	**-0.76***	**-0.19**	**-0.12**	**-0.51**	**-0.95***	**-0.65**
Adj. R^2	0.67	0.46	0.13	0.34	0.57	0.13	0.21	0.22	0.14	0.23	0.24	0.06
N	7	7	7	7	11	11	11	11	8	8	8	8

5.5 Pseudo-panel construction

In order to further refine our observations, we constructed a pseudo-panel with combined *individual* observations from PIAAC and PIRLS. We opted for the combination of PIRLS 2006 – PIAAC (15-20 cohort) because this combination includes the largest number of countries. For this exercise, we split both samples into subsamples by country and gender[13] (for example, one subsample contains all male PIAAC-respondents from Flanders). For each of these subsamples, we then sorted the sample according to the literacy score of individuals and divided it into percentiles. When a percentile contained more than one respondent, we calculated their average readiness to learn and learning enjoyment score. This way, we arrive at 2.200 'observations' (11 countries * 2 sexes * 100 percentiles) from PIAAC and a similar number from PIRLS. The observations from PIRLS and PIAAC were then matched pairwise (cf. Seawright (2009)) by gender and proficiency level. For example, we matched a male adult respondent from Flanders who scored at the lowest percentile in literacy with a male Flemish primary school pupil respondent who scored at the lowest percentile in literacy as well. This matching procedure is justified by the extensive evidence in the literature that skills at earlier ages strongly predict skills at a later age (cf. Cunha and Heckman (2007); Heckman (2006), Bradbury, Corak, Waldfogel, and Washbrook (2011)). This results in a dataset consisting of 2.200 matched observations for which we can compare attitudes towards learning reported in primary school and in early adulthood, respectively.

The procedure is illustrated for Flemish respondents in Figure 29 (left: males, right: females). The X-axis represents attitudes observed in primary school, and the Y-axis attitudes reported as an adult. The label represents the literacy score percentile on which the observations were matched. As can be seen, there is both a relationship between early and adult attitudes (positive regression slope) and between attitudes and proficiency (individuals with high proficiency are on average located at the upper right-hand side, those with low proficiency in the lower left-hand side).

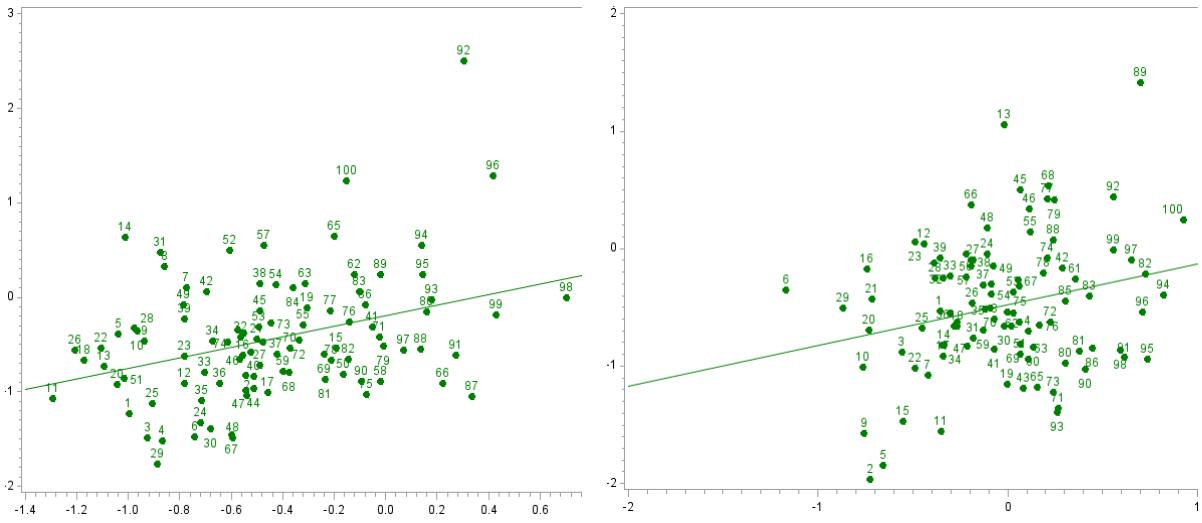


Figure 29: Matched data for Flanders (left: males, right: females).

[13] Gender is related to readiness to learn in PIAAC, while it has also been showed that it gender is also an important predictor of reading enjoyment in school (for example, Chiu and McBride-Chang (2006)).

On this matched dataset, we can then estimate the effect of early attitudes, sex, and literacy on adult attitudes on the individual level, assess how this relationship is affected by educational system characteristics, and assess how this effect depends on literacy level. The results are reported in Table 28. First, we observe a strong relationship with the literacy score, even after controlling for earlier attitudes. Hence, those with stronger skills report more positive attitudes as an adult, even taking into account the earlier attitudes themselves. Secondly, later tracking has a consistent positive effect on attitudes, with estimates being mostly significant. However, this effect seems to be, again somewhat surprisingly, largest at the upper end of the educational spectrum (though the interaction is not significant). Finally, grade retention (as a macro-variable) has a consistently negative effect on attitudes towards learning, though the results do not reach significance. This effect is larger at the lower end of the educational achievement spectrum, as expected.

Table 28: Long-term effects of systemic obstacles on learning attitudes in adulthood (estimates from a linear regression on the matched pseudo-panel dataset)

Dependent: attitudes as an adult						
Intercept	-0.07	-0.05	-0.06	-0.07	-0.05	-0.06
Proficiency percentile (x100); centered	0.54**	0.46**	0.48**	0.54**	0.45*	0.46**
Sex (ref: female)	0.04	0.08	0.07	0.05	0.08	0.07
Attitude in primary school	0.12	0.21	0.18	0.13	0.21	0.19
Tracking index (inverted)	0.12*		0.12*	0.12*		0.12*
Tracking index (inverted) * Percentile (x100)				0.04		0.05
Grade retention (%x10)		-0.70	-0.05		-0.07	-0.05
Grade retention (%x10)* Percentile (x100)					0.01	0.02
N	2200	2200	2200	2200	2200	2200
Dependent: enjoyment as an adult						
Intercept	0.18	0.27	0.25	0.17	0.27	0.24
Proficiency percentile (x100); centered	0.52***	0.52***	0.51***	0.52***	0.47**	0.44***
Sex (ref: female)	-0.12	-0.12	-0.11	-0.12	-0.12	-0.11
Enjoyment in primary school	-0.03	-0.03	-0.02	-0.03	-0.03	-0.01
Tracking index (inverted)	0.09*		0.08	0.09*		0.08
Tracking index (inverted) * proficiency percentile (x100)				0.08		0.09
Grade retention (%x10)		-0.09	-0.07		-0.09	-0.07
Grade retention (%x10) * proficiency percentile (x100)					0.04	0.06
N	2200	2200	2200	2200	2200	2200

5.6 Comparing learning attitudes in primary school (PIRLS / TIMSS), secondary school (PISA), and among adults (PIAAC)

The diff-in-diff-analyses presented in the previous sections may be insightful as to how educational system design influences the development of learning attitudes. However, a drawback of this approach is that we can only use information on countries that participated in both measurements involved. As this number is limited, statistical reliability is too low to arrive at sound conclusions; hence, our analyses remained mainly indicative. A possible way to accommodate for these small samples is to use PISA, the Programme for International Student Assessment, instead of PIAAC as the second measurement point, as PISA covers more countries than PIAAC. A drawback of PISA is that it concerns 15-year-olds, who are still in the midst of their educational career, instead of adults. However, the characteristics of the educational system that we discussed above can be expected to have affected the development of the attitudes toward learning at this stage already.

5.6.1 Data

PISA is organised every three years among 15 year olds, each time with a focus on one out three domains (mathematics, science, reading literacy). A number of background questions relate to the attitudes of the pupil towards the focus domain.

5.6.1.1 Attitudes towards reading – PISA 2009

We use data on attitudes toward reading taken from PISA 2009, when reading literacy was the key subject. In particular, we use the following variables:

- As an indicator of reading enjoyment, we use the answers to the question "*About how much time do you usually spend reading for enjoyment?*" Possible answers are:
    1. I do not read for enjoyment
    2. 30 minutes or less a day
    3. More than 30 minutes to less than 60 minutes a day
    4. 1 to 2 hours a day
    5. More than 2 hours a day

- As an indicator of the overall attitude toward reading, we use (the inverse of) the answer to the statement "*For me, reading is a waste of time".* Possible appreciations are:
    1. Strongly disagree
    2. Disagree
    3. Agree
    4. Strongly agree

5.6.1.2 Attitudes towards mathematics and problem solving – PISA 2012

Data on attitudes toward mathematics will be taken from PISA 2012, which focussed on mathematics as the key subject. In particular, we will use the following variables:

- As an indicator of mathematics enjoyment, we take (the inverse of) the answers to statement "I do mathematics because I enjoy it." Possible answers are:
    1. Strongly agree
    2. Agree
    3. Disagree
    4. Strongly disagree

- As an indicator of the overall attitude towards mathematics, we take the index of intrinsic motivation to learn mathematics (INTMAT). This variable was constructed from a factor analysis performed on the following items on the students view on mathematics:
    - I enjoy reading about mathematics
    - I look forward to my mathematics
    - I do mathematics because I enjoy it
    - I am interested in the things I learn in mathematics.

- As an alternative indicator of attitudes towards (mathematical) problem-solving, we will also consider the answers to the statement "I like to solve complex problems." Possible answers are
    1. Very much like me
    2. Mostly like me
    3. Somewhat like me
    4. Not much like me
    5. Not at all like me

5.6.2 Method

We apply a similar logic as the method used in the earlier sections. We compare the data on reading attitudes from PISA 2009 with the corresponding data from PIRLS 2006, the data on attitudes to mathematics from PISA 2012 with those from TIMSS 2007.

Compared to the 13 Western European countries participating in PIAAC (see Table 16), this yields four additional countries.

Table 29: Educational system characteristics of additional Western countries

Country	Tracking age	Tracking index (inverted)	Grade repetition at age 15 (%)	Ability grouping (% of schools)	System type (Dupriez et al., 2008)
Wallonia	12	-1.04	44	45.7	Early tracking
Luxembourg	13	-0.76	36.5	70.7	Early tracking
Scotland	16	1.08	2.32	99.1	Ab. grouping
Iceland	16	0.88	0.9	74.8	Ind. integration

5.6.3 Method

5.6.3.1 Comparing PIRLS 2006 and PISA 2009

Combining PIRLS 2006 and PISA 2009 yields 15 countries participating in both surveys. The pattern in Figure 29 differs somewhat from the observations in the previous sections. The early tracking countries Austria, the Netherlands and the Flemish part of Belgium are still mostly below the regression line, but Germany, Luxembourg and the Walloon part of Belgium report less negative attitudes towards reading. On the other hand, the individual integration countries do not stand out as significantly as above, but are situated closer to or even below the regression line. These findings thus somewhat seem to qualify our earlier observations.

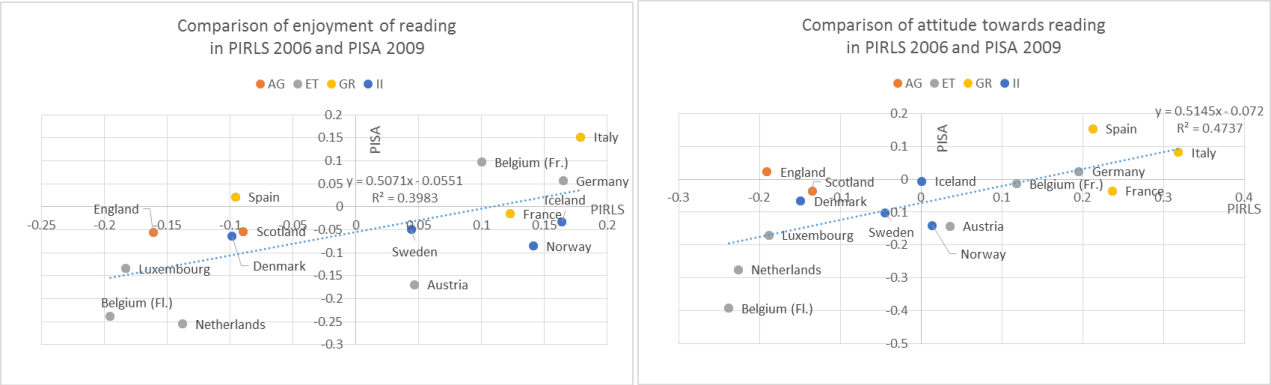


Figure 30 Comparison of reading attitudes measured in PIRLS 2006 and PISA 2009

The quantitative analysis reported in Table 30 shows a consistently negative effect of early tracking, but an ambiguous effect of grade retention use.

Table 30 Standardized regression estimates for predicting average attitudes among 15-year olds (PISA) based on average attitudes in PIRLS and educational characteristics (*p<0.01, **p<0.05, *p<0.1)**

	Attitudes		Enjoyment	
	(1)	(2)	(3)	(4)
Attitudes in primary education	0.72***	0.76***	0.64**	0.61**
Tracking index (inverted)	0.41**		0.20	
Grade repetition		-0.14		0.34
Adj. R^2	0.58	0.40	0.43	0.34
N	15	15	15	15

The combined information from three independent measurements allows to see how attitudes towards learning develop throughout the educational career. In Figure 32, the attitudes towards learning and reading are measured for (more or less) the same cohort: first, when they are in primary school (PIRLS, measured in 2006), a few years later, when they are in the middle of their secondary school (PISA, measured in 2009), and finally when they are about to leave school (PIAAC 15-20 cohort, measured in 2012). The countries are sorted by the average attitude measured in primary school. The fact that the lines are not parallel indicates that during the school career, average attitudes towards

learning change in different ways across countries. For example, the Nordic countries end up with more positive attitudes towards learning than would be expected from the primary school measurement. On the other hand, the position of Flanders and the Netherlands point at a steady deterioration of learning attitudes during secondary education.

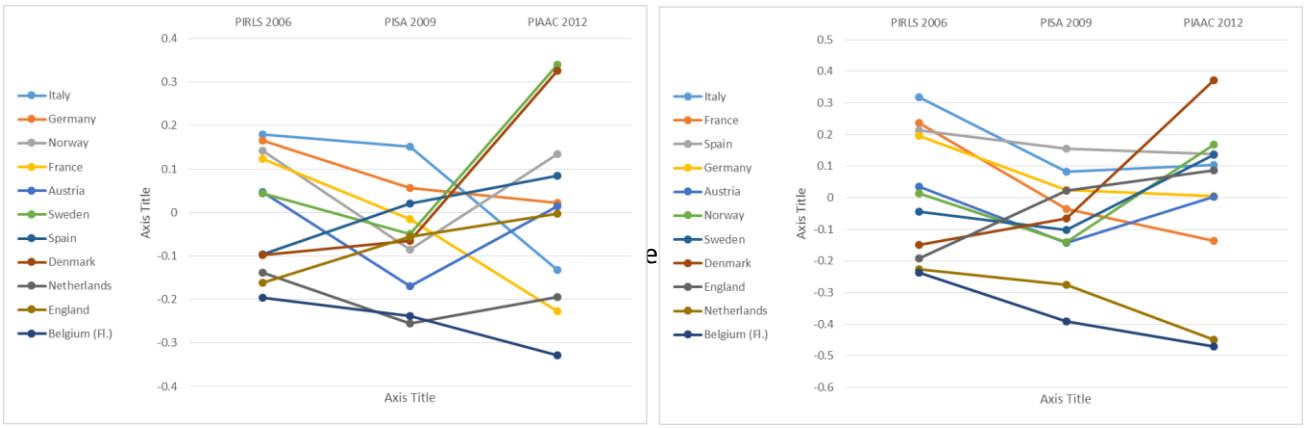


Figure 31 Attitudes towards learning (reading) at three measurement points. Left: enjoyment, right: overall attitudes

5.6.3.2 Comparing TIMSS 2007 and PISA 2012

Combining TIMSS 2007 and PISA 2012 yields 9 countries participating in both surveys. The comparison of the average attitudes towards mathematics (Figure 32) reveals roughly the same pattern as in in the previous section: the early tracking countries (Austria, the Netherlands and Germany) report the most negative attitudes towards mathematics in secondary school, after taking into account the attitudes reported in primary school. On the other hand, the individual integration countries again are less consistently above the regression line than in the analyses using PIAAC, except in the analysis where we used problem solving attitudes (panel below in Figure 32). The problem with the latter is that it shows no correlation between early and later learning attitudes.

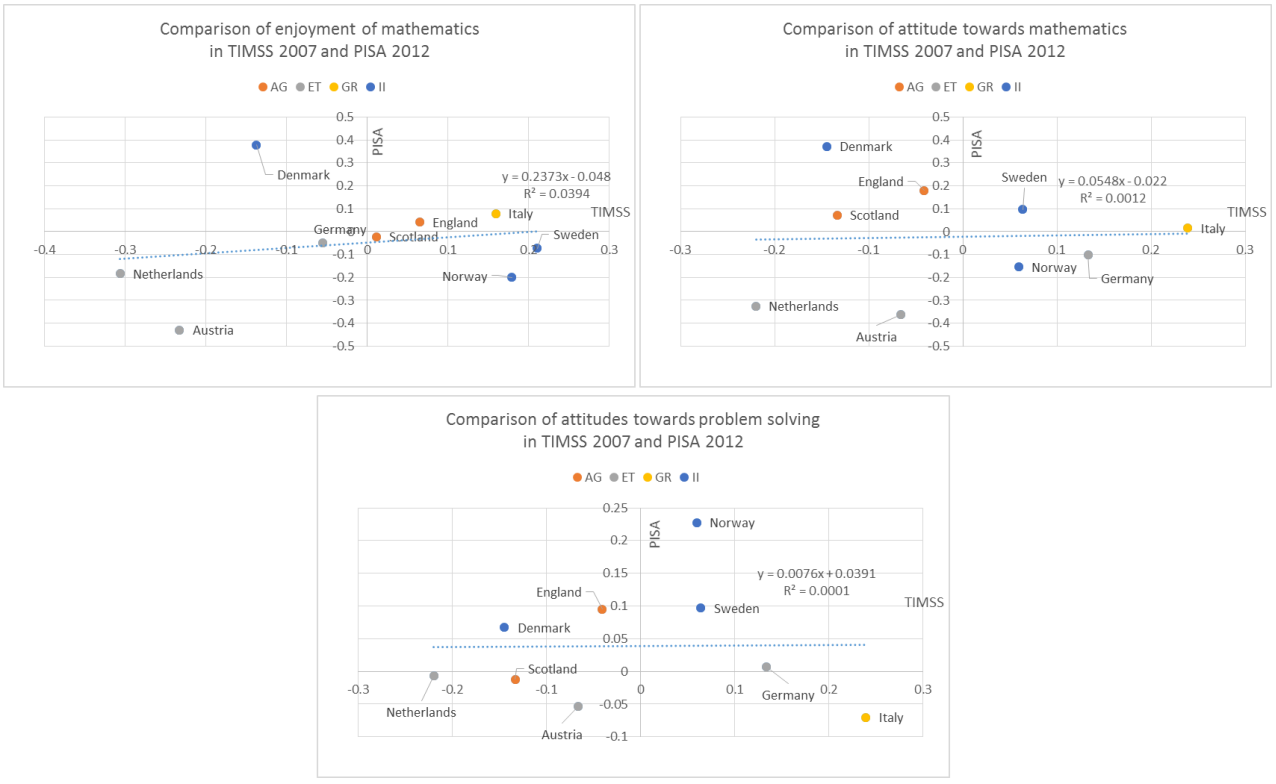


Figure 32 Comparison of attitudes towards mathematics measured in TIMSS 2007 and PISA 2012

The quantitative analysis again suggests a negative effect of both early tracking and frequent grade retention.

Table 31 **Standardized regression estimates for predicting average attitudes among 15-year olds (PISA) based on average attitudes in TIMSS and educational characteristics (***p<0.01, **p<0.05, *p<0.1)**

	Attitudes		Attitudes (problem solving)		Enjoyment	
	(1)	(2)	(3)	(4)	(5)	(6)
Attitudes in primary education	0.10	0.38	0.07	0.61**	-0.17	0.18
Tracking index (inverted)	0.72**		0.62*		0.60	
Grade repetition		-0.61		-1.05***		-0.14
Adj. R^2	0.34	0.03	0.18	0.66	0.02	0.02
N	9	9	9	9	9	9

Finally, the combination of the three independent measurements again reveals that some countries, such as Denmark, succeed in boosting positive views towards learning throughout their educational system, while other countries, particularly the Netherlands, Austria and Germany, end up with less positive attitudes at the end of secondary school.

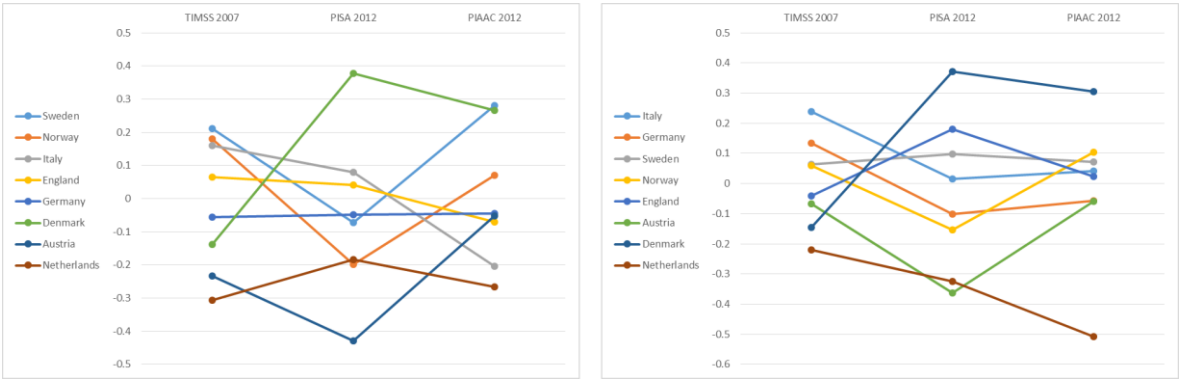


Figure 33 **Attitudes towards learning (reading) at three measurement points. Left: enjoyment, right: overall attitudes**

Chapter 6 Conclusion

The main purpose of this report was to examine, on the basis of the Adult Education Survey and PIAAC, the barriers that respondents report to explain their (non-)participation in lifelong learning. In Lavrijsen and Nicaise (2015b), we already noted that the Nordic countries in particular record high participation rates, specifically among disadvantaged groups. Overall, the analysis of the barriers investigated in this report suggests that this results from an integrated reduction of *all* important barriers that may constrain participation in lifelong learning (costs issues, family responsibilities, and reconciliation with the work schedule) (Figure 35). This underlines that adequate social and labour market policies are important in establishing a successful lifelong learning system.

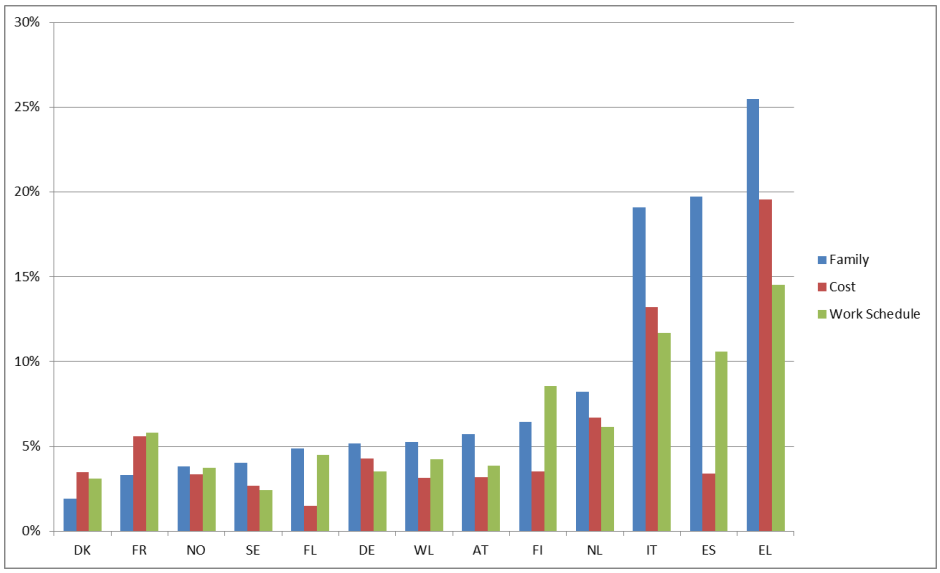


Figure 34 Share of the sample that is withheld from lifelong learning participation because of family responsibilities, costs, or work schedule (AES; multiple answers possible)

However, the analysis in Chapters 2 and 3 revealed two important pitfalls. First, the data quality of our main data source, the Adult Education Survey, appears to be rather poor on some points. Many countries did not apply the agreed procedure to collect information on self-reported barriers in an appropriate way. Consequently, we had to delete all AES data for these countries from our analysis. While this of course limited the scope of our study, a second concern is that most non-participants in lifelong learning, and particularly the low qualified among them, did not report *any* of the suggested barriers to explain their non-participation. Instead, they reported not being *willing* to participate. This underlines the role of 'learning intentions' or attitudes towards learning in explaining inequalities in lifelong learning, between different social groups as well as between countries.

We thus devoted an additional Chapter 4 to the analysis of cross-country differences in this willingness to learn so as to understand how institutional arrangements, in particular the design of the initial school system, could explain these differences. To this end, we used information from the PIAAC background questionnaire, which contains information on the 'readiness to learn' of the respondents, and we combined country-average values with three characteristics of the educational system

(tracking, grade retention, ability grouping) which are expected to influence the development of learning attitudes. This comparison reveals a remarkable correspondence between educational system design and learning attitudes of adults: whereas the Scandinavian countries (individual integration system) excel in promoting more positive attitudes towards learning (Figure 36), countries with early tracking tend to discourage learners - particularly the low achievers.

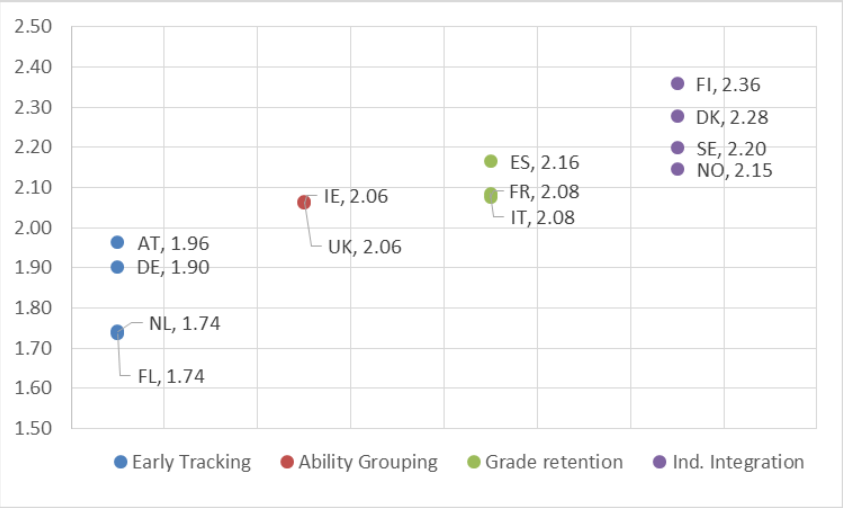


Figure 35 Correspondence between average readiness to learn and educational system design

Admittedly, the correlation depicted above provides insufficient proof of a causal relationship between the observed system characteristics and adults' learning attitudes. For example, it can be argued that the country differences observed above rather reflect other characteristics of the countries under study (e.g. cultural differences in response behaviour). Hence, in Chapter 5, we tried to further determine the influence of the design of the educational system on learning attitudes by performing some 'diff-in-diff'-analyses in which we compared learning attitudes measured at different stages in the educational career: in primary school (PIRLS, TIMSS), in secondary school (PISA), and at the end of the school career (PIAAC). The analysis tends to confirm that the design of the educational system has its own effect on the development of learning attitudes, with early tracking and the intensive use of grade retention being associated with a *stronger reduction in the readiness to learn* across the learning career. However, the small sample sizes in the diff-in-diff-analyses preclude robust statistical estimations. Moreover, the strength of the observed relationships also depends on the choice of the dataset and key variables (with deviations from the overall pattern in the analyses involving PISA). Finally, reproducing the analyses separately for weak and strong students reveals that early tracking has stronger (negative) effects on attitudes in the *upper* part of the achievement distribution, which seems to be at odds with the conventional explanations in terms of stigma or less attractive learning environments for weaker students. Similarly, while we did find that grade retention has its strongest effects at the lower end of the spectrum (as expected), the negative effect does not vanish completely among students at the upper end of the spectrum who are unlikely to have undergone grade retention themselves. Such findings raise questions on the validity of the previously discussed relationships, in particular on the possible distortion of our observations by unobserved country-specific factors. Hence, further research is needed for a more thorough understanding of how the educational system affects attitudes towards learning.

ANNEXES

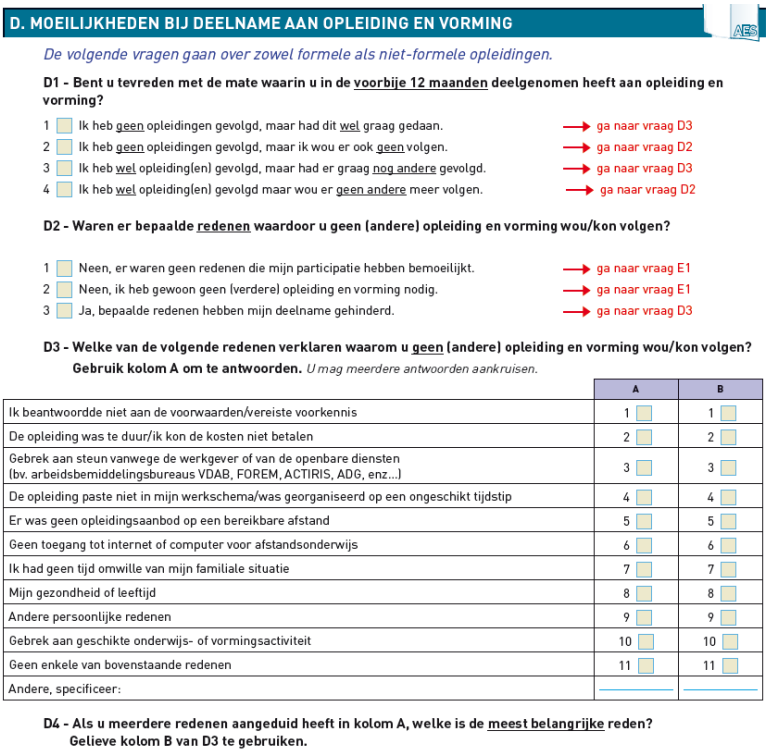
Annex 1 National AES-questionnaires as an explanation for unusual patterns

A1.1 Flanders

In Flanders, where the questionnaire was to be completed in writing by the respondent (without direct personal assistance):

- question D1 helped to categorize the respondents.
- for groups 1 and 3,
  - question D2 (option 2) then selected out those with “no need - difficulty 11”; after this, the section ended
  - those who referred to specific difficulties (option 3), then ticked these from the list (D3) and named their most important difficulty (D4)
- groups 2 and 4 immediately ticked their difficulties from the list (D3) and named their most important difficulty (D4)

Note that the list of potential difficulties is not explicitly referred to in the beginning of the section, but probably respondents will have a look at it already from the start since it is on the same page. Hence, the entire setup closely follows the guidelines from the manual.



D. MOEILIJKHEDEN BIJ DEELNAME AAN OPLEIDING EN VORMING

De volgende vragen gaan over zowel formele als niet-formele opleidingen.

D1 - Bent u tevreden met de mate waarin u in de voorbije 12 maanden deelgenomen heeft aan opleiding en vorming?

1 ☐ Ik heb geen opleidingen gevolgd, maar had dit wel graag gedaan. → ga naar vraag D3
2 ☐ Ik heb geen opleidingen gevolgd, maar ik wou er ook geen volgen. → ga naar vraag D2
3 ☐ Ik heb wel opleiding(en) gevolgd, maar had er graag nog andere gevolgd. → ga naar vraag D3
4 ☐ Ik heb wel opleiding(en) gevolgd maar wou er geen andere meer volgen. → ga naar vraag D2

D2 - Waren er bepaalde redenen waardoor u geen (andere) opleiding en vorming wou/kon volgen?

1 ☐ Neen, er waren geen redenen die mijn participatie hebben bemoeilijkt. → ga naar vraag E1
2 ☐ Neen, ik heb gewoon geen (verdere) opleiding en vorming nodig. → ga naar vraag E1
3 ☐ Ja, bepaalde redenen hebben mijn deelname gehinderd. → ga naar vraag D3

D3 - Welke van de volgende redenen verklaren waarom u geen (andere) opleiding en vorming wou/kon volgen?
Gebruik kolom A om te antwoorden. *U mag meerdere antwoorden aankruisen.*

	A	B
Ik beantwoordde niet aan de voorwaarden/vereiste voorkennis	1 ☐	1 ☐
De opleiding was te duur/ik kon de kosten niet betalen	2 ☐	2 ☐
Gebrek aan steun vanwege de werkgever of van de openbare diensten (bv. arbeidsbemiddelingsbureaus VDAB, FOREM, ACTIRIS, ADG, enz...)	3 ☐	3 ☐
De opleiding paste niet in mijn werkschema/was georganiseerd op een ongeschikt tijdstip	4 ☐	4 ☐
Er was geen opleidingsaanbod op een bereikbare afstand	5 ☐	5 ☐
Geen toegang tot internet of computer voor afstandsonderwijs	6 ☐	6 ☐
Ik had geen tijd omwille van mijn familiale situatie	7 ☐	7 ☐
Mijn gezondheid of leeftijd	8 ☐	8 ☐
Andere persoonlijke redenen	9 ☐	9 ☐
Gebrek aan geschikte onderwijs- of vormingsactiviteit	10 ☐	10 ☐
Geen enkele van bovenstaande redenen	11 ☐	11 ☐
Andere, specificeer:	_____	_____

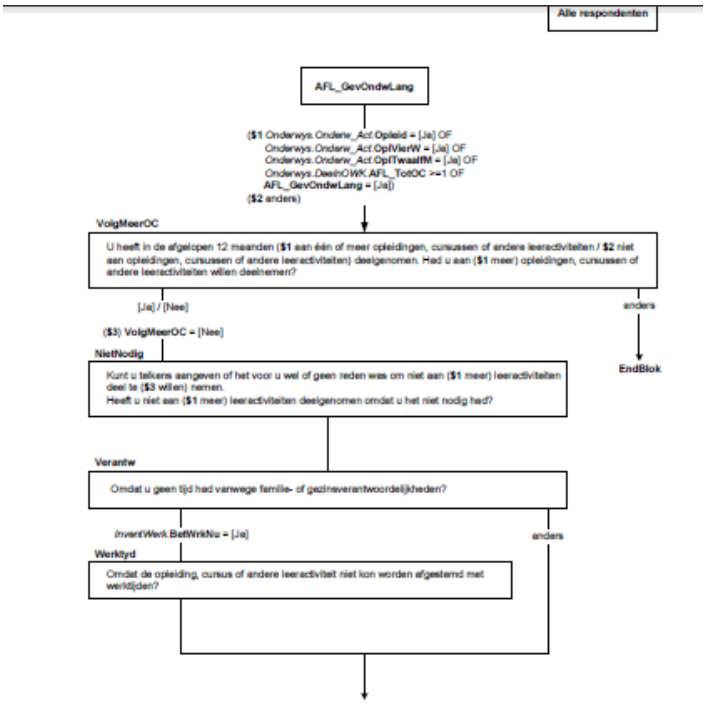
D4 - Als u meerdere redenen aangeduid heeft in kolom A, welke is de meest belangrijke reden?
Gelieve kolom B van D3 te gebruiken.

A1.2 Netherlands

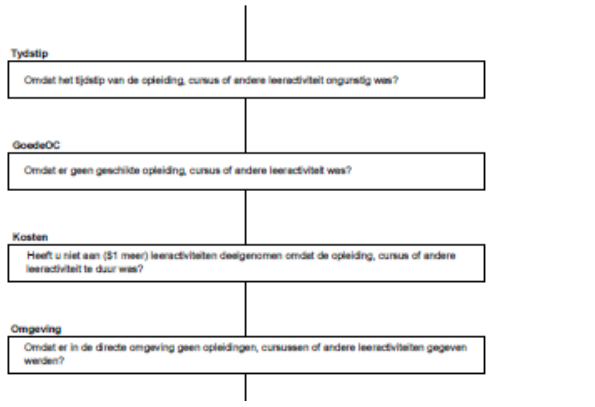
In the Netherlands, CATI (Computer Assisted Telephone Interviewing) was used. The algorithm is defined below:

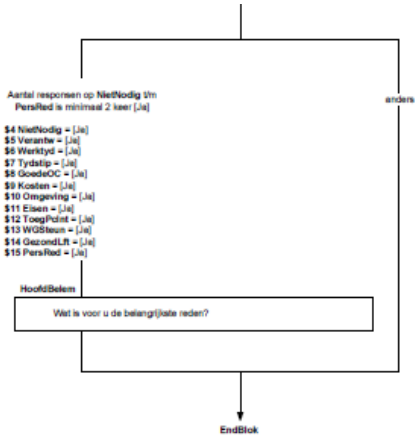
- groups 1 and 3 are defined by the question VolgMeerOC ($3=[Nee]),
    - then the first question NietNodig selected out those with “no need - difficulty 11”
    - BUT the section does NOT end after this: even when one confirmed to have just felt “no need”, one went through the other difficulties as well; hence, respondents can have ticked both “no need - difficulty 11” AND other difficulties
    - at the end, respondents chose their main difficulty from all the confirmed difficulties; hence, for respondents who ticked both “no need - difficulty 11” AND other difficulties the main difficulty could be either 11 or any other
- groups 2 and 4 ticked their difficulties (and chose their main difficulty) from this same list

Further note that the full list of potential difficulties is not explicitly referred to at the start: all items are suggested one by one.



AES 2012 – Blok Belemmeringen voor het volgen van opleidingen [BelemOpl]





A1.3 Germany

In Germany,

- groups 1 and 3 (but also, surprisingly, group 4 [F120=2]) get the “no need”-question (further note that this question was split up in two questions, one referring to occupational and the other to private contexts)
    - for group 1 (F121a=2), those who chose “no need” (F122B=1, F122A = 1) are referred to the end of the section (F124), as required by the guidelines
    - BUT group 3 is not given this treatment: even if they select the “no need”-answer, they are suggested the OTHER difficulties as well; hence, respondents from group 3 can have checked both “no need - difficulty 11” AND other difficulties
    - for those respondents (from group 3) who have checked both “no need - difficulty 11” AND other difficulties, the main difficulty can again be either 11 or any other (question F123)

- groups 2 and 4 tick their difficulties (and choose their main difficulty) from this same list

ZP: F120=2, F121a=1,2

F122 erfragen *(Nicht-TN, TN, die wollten & TN mit besonderen Gründen)*

Es kann die verschiedensten Gründe geben, warum man keine *[wenn F120=1 "weiteren"]* Bildungs- oder Weiterbildungsaktivitäten unternimmt. Ich lese Ihnen eine Reihe möglicher Gründe vor.

Sagen Sie mir bitte zu jedem Punkt, ob das in den letzten 12 Monaten bei Ihnen persönlich ein zutreffender Grund war.

Achtung, wenn F121a = 2 zunächst nur die Statements F122A/B einblenden

****INT: Vorgaben vorlesen!*

		Zutreffend 1	Nicht zutreffend 2	keine Angabe 9	
F122A	*[einblenden, wenn F121a=2,F120=2]* Ich benötigte keine *[wenn F121a=2:* weitere*]* Weiterbildung für meinen Beruf.	○	○	○	A
F122B	*[einblenden, wenn F121a=2,F120=2]* Privat hatte ich keinen *[wenn F121a=2:* weiteren*]* Bedarf an Weiterbildung.	○	○	○	B
	Wenn F121a=2 und (F122B=1, F122A=1) >> weiter mit F124; sonst alle anderen Gründe einblenden (F122C bis F122P)				
F122C	Ich hätte gern etwas gemacht, hatte jedoch nicht die Teilnahmevoraussetzungen.	○	○	○	C
F122D	Ich hätte gerne etwas gemacht, aber es war mir zu teuer.	○	○	○	D
F122E	Der Arbeitgeber unterstützte meine Weiterbildungsabsichten nicht.	○	○	○	E
F122F	Meine beruflichen Termine haben mir für Weiterbildung keine Zeit gelassen.	○	○	○	F
F122G	Meine familiären Verpflichtungen haben mir für Weiterbildung keine Zeit gelassen.	○	○	○	G
F122H	Die Entfernung zum Weiterbildungsanbieter war zu groß.	○	○	○	H
F122I	Ich hätte gerne an einer Weiterbildung teilgenommen, aber es gab keine geeigneten Bildungs- oder Weiterbildungsangebote	○	○	○	I
F122J	Ich konnte mich nicht damit anfreunden, wieder wie in der Schule zu lernen.	○	○	○	J
F122K	Meine Gesundheit erlaubt mir solche Aktivitäten nicht.	○	○	○	K
F122L	In meinem Alter lohnt sich Weiterbildung nicht mehr.	○	○	○	L
F122M	Ich glaube nicht, dass ich es schaffen würde, die Anforderungen in einer Weiterbildung zu erfüllen.	○	○	○	M
F122N	Ich bräuchte eine Beratung, um zu wissen, welche Weiterbildung für mich in Frage käme	○	○	○	N
F122O	Ich hätte gerne ein Fernlernangebot wahrgenommen, hatte aber keinen Computer- oder Internetzugang.	○	○	○	O
F122P	Sonstige Gründe	○	○	○	P

für Eurostat: (104) DIFFTYPE1A (105) DIFFTYPE1B (107) DIFFTYPE2
(109) DIFFTYPE3A (110) DIFFTYPE3B

wenn in F122 mehr als ein Item zutreffend (Code 1), weiter mit F123; sonst → F124

F120 generieren und ablegen *ZP: alle*

Filterdefinition:
- ○ *Teilnehmer an FED/NFE: F051=1,2, F088=1* 1
- ○ *Nichtteilnehmer: alle sonstigen* 2

für Eurostat: (103) DIFFICULTY

wenn F120=1 → weiter mit F121a ; sonst →weiter mit F121b

F121a erfragen *ZP: F120=1 (Teilnehmer)*

Sie haben uns zuvor Bildungs- oder Weiterbildungsmaßnahmen beschrieben, an denen Sie teilgenommen haben oder derzeit teilnehmen. Hätten Sie in den letzten 12 Monaten gerne an weiteren Bildungs- oder Weiterbildungsmaßnahmen teilgenommen?

○	Ja	Eurostat: Group 2 (Teilnehmer, die wollen)	1
○	Nein	Eurostat: Group 1 (Teilnehmer, die nicht wollen)	2
○	Keine Angabe		9

für Eurostat: (103) DIFFICULTY

wenn F121a=1,2 → weiter mit F122; sonst → weiter mit F124

F121b erfragen *ZP: F120=2 (Nichtteilnehmer)*

Gab es in den letzten 12 Monaten eine bestimmte Bildungs- oder Weiterbildungsmaßnahme, an der Sie gerne teilgenommen hätten?

○	Ja	Eurostat: Group 4 (Nicht-Teilnehmer, die wollen)	1
○	Nein	Eurostat: Group 3 (Nicht-Teilnehmer, die nicht wollen)	2
○	Keine Angabe		9

für Eurostat: (103) DIFFICULTY

→ weiter mit F122

F123 erfragen *ZP: Mehrfachnennungen Code 1 in F122*

PROGR: Hier werden nur die zutreffenden Statements, die in F122=1 sind, eingeblendet.
PROGR: Bei genau einmal F122=1 wird genannter Grund aus F122 in F123 gesetzt.

Sie haben mehrere Gründe genannt. Welches davon war für Sie der wichtigste Grund?

****INT: Vorgaben bitte vorlesen und Zutreffendes ankreuzen!*

○	Ich benötigte keine Weiterbildung für meinen Beruf.	1
○	Privat hatte ich keinen Bedarf an Weiterbildung.	2
○	Ich hätte gern etwas gemacht, hatte jedoch nicht die Teilnahmevoraussetzungen.	3
○	Ich hätte gerne etwas gemacht, aber es war mir zu teuer.	4
○	Der Arbeitgeber unterstützte meine Weiterbildungsabsichten nicht.	5
○	meine beruflichen Termine haben mir für Weiterbildung keine Zeit gelassen.	6
○	Meine familiären Verpflichtungen haben mir für Weiterbildung keine Zeit gelassen.	7
○	Die Entfernung zum Weiterbildungsanbieter war zu groß.	8
○	Ich hätte gerne an einer Weiterbildung teilgenommen, aber es gab keine geeigneten Bildungs- oder Weiterbildungsangebote	9
○	Ich konnte mich nicht damit anfreunden, wieder wie in der Schule zu lernen.	10
○	Meine Gesundheit erlaubt mir solche Aktivitäten nicht.	11
○	In meinem Alter lohnt sich Weiterbildung nicht mehr.	12
○	Ich glaube nicht, dass ich es schaffen würde, die Anforderungen in einer Weiterbildung zu erfüllen.	13
○	Ich bräuchte eine Beratung, um zu wissen, welche Weiterbildung für mich in Frage käme	14
○	Ich hätte gerne ein Fernlernangebot wahrgenommen, hatte aber keinen Computer- oder Internetzugang.	15
○	Sonstige Gründe	16
○	in F122 kein Grund genannt *(setzen, wenn alle Statements in F122=2,9)*	98
○	Keine Angabe *(setzen, wenn alle Statements in F122=9)*	99

Für Eurostat: (106) DIFFMAIN1 (108) DIFFMAIN2
(111) DIFFMAIN3

→ weiter mit F124

A1.4 Sweden

In Sweden,

- groups 1 and 3 first get the "no need"-question (60a)
    - those who chose "no need" are referred to the end of the section (Q63)
    - BUT there is also the possibility to choose 'didn't need any more education AND other reason", and for these the list with the other items is presented (Q60b)
    - the latter group also has to choose the most important reason (Q60c), and they can only choose from the list of other items (thus NOT 11)

- groups 2 and 4 tick their difficulties (and choose their main difficulty) from the same list

Note that in the formulation of the question 60a, explicit reference is made to a short list of possible difficulties ("Another reason might be…")

60a	**Did your non-participation depend on the fact that you didn't need any more education or was there another reason? Another reason might be e.g. family commitments, costs associated with the education or health problems.** ANOTHER REASON COULD BE THAT YOU DIDN'T HAVE THE RIGHT PRECONDITIONS, FAMILY COMMITMENTS, COST, HEALTH OR AGE. IF IP CONSIDERS SEVERAL DIFFERENT COURSES/PROGRAMMES, ASK THEM TO CONSIDER THE ONE THAT IS THE MOST IMPORTANT FOR THEM.	☐ DIDN'T NEED ANY MORE EDUCATION→Go to Question 63 ☐ OTHER REASON → Go to Question 60b ☐ DIDN'T NEED ANY MORE EDUCATION AND OTHER REASON → Go to Question 60b ☐ DON'T KNOW→ Go to Question 63 ☐ PREFER NOT TO ANSWER→ Go to Question 63

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